

# The Boston Medical and Surgical Journal

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## Address.

### ON MEDICAL TESTIMONY.\*

By J. W. COURTNEY, M.D., BOSTON.

Mr. Chairman, Fellows of the Senior Class:

I AM SORRY, indeed, for the complete inability to engage in extempore speaking, which compels me to consign in advance my ideas to paper. However, if you will bear with me, I will endeavor to lay before you very briefly certain practical facts, gathered from a rather extensive experience, concerning the giving of medical testimony in courts of law.

At the present time, this sort of testimony is derided by the press, and looked upon askance by the courts; and the entire blame for such a deplorable state of affairs rests upon the shoulders of certain men in our own ranks, but not deservedly, thank Heaven, upon the shoulders of the profession as a whole.

Tradition, precept, and daily contact with human misery, should keep men of our calling from knavery, but, unfortunately, they not infrequently fail to do so. And the result is that, from time to time, the ends of justice are sadly defeated by medical men who, under oath, emit theories of disease that are accepted as trustworthy scientific facts by jurors, but which would meet with nothing but contempt even in the humblest gathering of medical men.

Curiously enough, however, it is not always knavery on the part of our profession, which

\* An address given to the graduating class of the Harvard Medical School, November 19, 1915.

brings about a miscarriage of justice. More than once I have seen the gallows or the electric chair cheated of its legitimate victim through the testimony of eminently conscientious medical men of broad experience, who permitted their judgments to be hopelessly warped by a pathetically childish credulity.

I shall not further proceed with this particular phase of my subject, but I will venture to emphasize the fact that there is in it much food for sober reflection, particularly for a group of men like yourselves, whose court experience is all before them.

At some time in his career, practically every physician, however unversed he may be in medico-legal medicine, is bound to be called to the witness stand,—a situation which, in the mind of the average medical man, is identical with that of the young recruit on the firing-line in modern warfare. The position of the physician on the stand is, in fact, comparable to that of the man in the trenches, the efficiency of each being strictly proportionate to the quality and amount of his ammunition and his ability to utilize it. Without clear-cut ideas, and the power to express them in language at once intelligible, not only to learned court and counsel, but also to the more or less heterogeneous collection in the jury-box, the physician's effectiveness as a witness is quickly annihilated by a withering fire of cross-examination, and by a disconcertingly palpable mixture of apathy and scorn on the part of the jurors.

This brings us to a subject of paramount importance—preparedness. What most perturbs the average medical witness, before he goes upon

the stand, is the apprehension that he may be quizzed upon forgotten fine points in anatomy and pathology. This apprehension is, for the most part, absolutely groundless. The majority of experienced cross-examiners know full well that such tactics generally serve only to lead the examiner and witness alike into a barbed-wire entanglement of terms, fatal to clarity of understanding on the part of the jury; hence to be avoided.

The attending physician in a given case is called upon to testify to matters of fact only, and he may always rest assured that if he confines his testimony to what he has observed about his patient, he will be protected by the court and by his own counsel from the endeavors of the opposing counsel to lead him into paths which only expert medical witnesses have a right to enter. Such being the case, the attending physician should never by any chance take the stand unless his knowledge of his patient's family and previous history is co-extensive with that of the nature and clinical expression of the illness in dispute. He may be sure that in the preparation of opposing counsel's case, these particulars will have been gone into with the most searching minuteness. And it is disconcerting beyond words to a medical witness on cross-examination to have thrust under his nose incontrovertible documentary evidence to the effect that his patient, whom he has assumed to be entirely trustworthy, has served time for criminal offences, or has for years drawn a pension for the bodily ailments alleged to be the result of the accident which forms the basis of the action in which witness is, at the moment, testifying.

Many general practitioners make very full notes of an accident, and of the attending symptoms, in cases which promise to be followed by court procedures, but rarely in others. This fact is usually brought out on cross-examination, and construed by opposing counsel as evidence of the partisanship of the witness. As a matter of fact, witness has the right to make as many notes as he pleases, and refresh his memory from them when he is on the stand, but such notes must be made at the time of the clinical observations they purport to describe. A witness who is knave enough to introduce records which are garbled, or in any respect demonstrably different from what they originally purported to be, simply lets himself in for a merciless grilling at the hands of opposing counsel, and a sharp admonition, if nothing worse, from the court.

It follows, then, that any attending physician who steps upon the witness stand, armed with all the medical facts of his case, and who adheres closely to these facts in giving his testimony, has little to fear from cross-examination. His troubles begin the moment he allows himself to be drawn into the realm of speculation, and to venture opinions based upon hypotheses. In such cases, I can assure him that unless his sensibilities are protected by a pachydermatous envelope,

they will receive wounds, the scars of which will never be obliterated.

For the comfort of the medical witness who is compelled to confine his testimony to statements of observed fact, let me hasten to say that the medical expert's journey through the mazes of court procedure is by no means along a primrose path. The latter's only *raison-d'être* as an expert is his highly specialized knowledge, gleaned from a wide experience in his chosen field of medical science, and Heaven help him if, on the witness-stand, he has the temerity to overstep the borders of this field. Heaven help him, even if he doesn't, for that matter. His testimony may embody the most advanced scientific thought of the day, but unless it is couched in simple terms, its sole effect upon the jury is generally a purely soporific one. Opposing counsel is swift to take note of this fact, and his cross-examination is apt to be inspired by scientific writings with which he and the jury likewise have a common familiarity; for example, those of Dr. Munyon, Lydia Pinkham, or even Mary Baker Eddy. Hence, the lot of the expert, like that of the policeman in one of Gilbert and Sullivan's operas, is "not a happy one." I will return to this subject later, with certain suggestions which may help to mitigate the hardships of court experience for the general, as well as the special, practitioner.

The present mode of procedure in our courts is, so far as medical testimony is concerned, not a particularly edifying one. To illustrate this point, let us take, for example, a case of the type which is most commonly met with in the every day work of the courts—an action of tort for personal injuries. In such a case, the plaintiff is practically always of the proletariat class; the defendant, a public service corporation, or an insurance company. The array of witnesses on either side is generally appalling. Of these the medical ones alone concern us. They are of two hostile camps, and prepared to attempt under solemn oath, to uphold opinions diametrically opposed, yet supposedly derived from a single given series of facts and observations.

The situation is a deplorable one, and nobody discerns the glaring wrong of it all with clearer vision than certain high-minded men from our ranks, who have long striven to procure legislative enactment looking toward the abolition of this evil.

To me, for many reasons, which I cannot here enumerate, it seems hopeless to expect that legislative appeal on the part of such men will ever be fruitful of the desired results. Hence, it is the bounden duty of every man in the profession so to shape his conduct toward cases which promise to eventuate in court proceedings, that due respect will be given his opinion, that he will not merit the biting sarcasm, the sneers, the railery and general brow-beating of opposing counsel. And most important of all, that through his efforts the ends of justice will really be accomplished.

Neither the ordinary medical witness, nor the expert, has any right, moral or other, to allow feelings of partisanship to warp his judgment, or color an opinion given under oath.

The attending physician must, of course, show the utmost loyalty to his patient, but this loyalty does not call for gross exaggeration, or, worse still, downright perjury on his part. His only legitimate function is to administer to his patient, with all the skill of which he is possessed; to observe carefully and minutely the manifestations of the patient's disorder, and, finally, when called upon, to go upon the witness stand and state what he has observed, together with such conclusions only as practical experience with similar cases allows him to draw therefrom.

In cases of accident involving a possible lawsuit, it is no part of his duty to endeavor to fix responsibility; and it should be beneath his dignity needlessly to frequent law offices, to truckle with claim-agents, or in any way to act as a quasi-legal go-between in proceedings looking toward the financial adjustment of his patient's grievances. These same principles apply with equal force to the medical expert. He also should never forget that, both in and out of court, his function is solely a medical one. And if his sense of honor is, as it should be, of the same high order as his intelligence, he will not stoop to petty tactics, born of offensive partisanship, and despised by judge, jury, counsel, and general public alike.

Let us picture, now, the attending physician and the medical expert in a given court-room, waiting their turn to go upon the stand. I have given testimony in several states, and I can assure you that in no others is the dignity of the law so forcibly impressed upon one's mind as in our own Massachusetts. Hence, the first thing the waiting medical witness should be wise enough to do, is to take his tone from that of the court. Upon the stand the witness' manner should never be flippant, nor should it bear the stamp of spurious ease. His answers to counsel should be rigidly responsive, and he should never volunteer a statement when no question is before him. He should have prominently in mind the fact that directly he steps upon the stand he is a servant of the commonwealth. This does not mean, however, that he is in any sense an advocate; quite the contrary. Therefore, he should always refrain from arguments with counsel. He will find it difficult, very difficult, at times to give the desired "yes" or "no" answer, but it is always better to try to do so. Witness will lose nothing by so doing, because both the court and his own counsel will see to it that he has later an opportunity to amplify his statement to his entire satisfaction. His language should represent an effort to meet with the understanding of the twelve men who will ultimately decide the case. He should sedulously avoid the answer: "Not necessarily," which never serves other purpose than to get him deeper into the mire of cross-examination. He should not

keep one eye on his own counsel and the other on his cross-examiner. His whole attention should be directed toward the jury. He should not constantly appeal to the court when crowded by legitimate cross-questioning, and above all things, he should never allow his voice to sink to an inaudible murmur. Neither should he allow a display of temper to betray itself by shrill or petulant tones. The man who learns quickly to keep his temper in his pocket has the making of a good witness.

Gentlemen, I could go on at greater length, but am stayed by the firm conviction that if the above simple suggestions were conscientiously followed by every medical witness in every case, court proceedings would soon lose their terror for men in our profession, the value of their testimony would be enhanced a hundredfold and there would soon be little left in the way of abuse of medical testimony for the legislature or any other governing body to correct. It is, therefore, most emphatically the clear duty of each and every one of you in your court activities to break away from evil tradition and start the much-needed work of regeneration.

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## Original Articles.

### SIMPLIFIED METHODS OF TRANSFUSION.

By EDW. H. RISLEY, M.D., F.A.C.S., BOSTON.

The purpose of this article is not to describe a new technic, but to offer a few suggestions as to how any method used may be made simple and successful.

A great deal of almost mystery has surrounded the operation of transfusion in the past, mainly because of the delicate methods of technic necessary until quite recently. Transfusion should not be—and actually is not—a difficult procedure as we have been led to suppose.

Success depends on two factors: 1. The recognition and appreciation of how easily blood clots when coming in contact with any foreign substance other than vessel walls, and, 2. The possession of proper apparatus for counteracting clotting. Apparatus to be serviceable must be simple and sure to work and not too delicate. A great many clever devices have been invented to facilitate the technic and make the procedure one which can be safely and successfully used in the hands of the surgeon. So far, the procedure has been rarely undertaken by any but those skilled in the use of some particular bit of technic, and is not a procedure which the physician or general practitioner (as contrasted with the surgeon) cares to undertake.

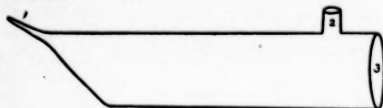
Transfusion is a device of such great service and the conditions in which it is used are generally so much of the emergency type, that a technic cannot be considered a safe and simple

technic that is not available for every physician and without the necessity of the beforehand tedious preparation.

Recently the use of sodium citrate to prevent clotting has been advocated, especially by Weil,<sup>1</sup> and simple technic developed by Lewishon,<sup>2</sup> and also Zingher.<sup>3</sup>

The author has recently tried out these and many other advocated methods in the laboratory and makes the following suggestions for those wishing to do transfusion, and who wish to have on hand simple means of assuring its success.

It occurred to us to try among other procedures, the collection of blood in a simple glass cylinder, uncoated with paraffin, but kept at body temperature by previous immersion in hot water (110°) and during transfusion wrapped in a hot towel wet in sterile water. This cylinder is a modification of the Kimpton-Brown tube which we find easier to handle and less breakable (see drawing), or practically the Vincent tube.



1. Cannula end with ground glass tip.
2. For bulb and tube (situated on side instead of as here drawn).
3. For cork stopper.

With two assistants and with good sized and accessible veins of both donor and recipient, blood could be transferred from one to the other without clotting in the warm tube, during the time of transfusion. This was always possible with two assistants and no delay in the process, but with only one or no assistant and with the necessary delay in effecting the proper opening of the recipient's vein, clotting was very liable to take place in the cannula end of the tube. We feel, however, that in the event of the breakage of one (of the two tubes generally on hand) or lack of time in which to recoat a second tube, the original tube may be rapidly washed out, first with cold then with hot sterile water and transfusion carried on with a reasonable expectation of success. This is offered simply as a suggestion which at some time might be successful.

Methods of transfusion have recently been revolutionized and greatly simplified by the introduction of the use of sodium citrate to prevent clotting.

Using one part of a 2% citrate solution to ten parts of blood, transfusion is made extremely simple, safe and sure by any of the various technics one wishes to employ. This of course applies only to indirect transfusion, which is the only method advocated at present.

The author is almost equally divided between the use of the uncoated glass cylinder and the

method by syringes. Both have their advantages. The apparatus necessary with the cylinder method, while more fragile, is much less expensive to provide oneself with. Good 20 to 50 c.c. syringes are very costly.

With easily accessible veins in the recipient, as in adults, the placing of 15 c.c. of citrate solution in the cylinder (not coated with paraffin) drawing 300 c.c. of blood, adding another 15 c.c. of citrate solution and thoroughly mixing the two, then introducing this into the recipient's vein (the recipient, for psychic reasons, being in an adjoining room), is most simple and safe.

Citrated blood can be kept several hours if necessary before being transferred to the recipient and it has also been demonstrated that the coagulation time of the recipient's blood after citrate transfusion was increased rather than decreased, as one would expect. This point we have not confirmed by laboratory test, but we have found no ill results from the use of citrated blood.

With infants, when the psychic element in the recipient need not be considered and smaller amounts are to be used, and perhaps in divided doses, the withdrawal of 20 to 50 c.c. of blood by aspiration from a vein in the bend of the elbow, (without the necessity of cutting down on the vein) into a syringe containing 2 to 5 c.c. of citrate solution, then adding the same amount at the end of aspiration, agitating the syringe so as to mix the two, then injecting into a small exposed (saphenous or external jugular) vein is also extremely simple and sure to work.

Most medical (as distinguished from surgical) men at present are familiar enough with the use of the needle in phlebotomy to be able to accomplish this readily.

Syringe transfusion can readily be done alone if small amounts are to be used, and with the aid of a nurse and one assistant to keep the needles in the veins of the donor and recipient free during the transfer of the syringe from one to another, by the injection of small amounts of weak (1%) citrate solution, any amount desired can be transfused with ease. The 16 gauge (B. & S.) needle used in salvarsan work will suffice, but the larger 11 gauge is much better.

It is also possible to do transfusion by the even simpler method of Lewishon,<sup>2</sup> who draws blood from the donor by means of an 11 gauge cannula plunged into the donor's vein, collecting it in an open beaker, in which the citrate solution is contained, and stirring the blood as it accumulates with a glass rod to ensure thorough mixing with the citrate. The citrated blood is then carried to the recipient and poured into an open funnel leading by a rubber tube and trochar to the recipient's vein, or introduced by means of a salvarsan apparatus. This is a simple method, but has the great objection that the blood necessarily comes into contact with the air a great deal.

The purpose of this paper is to point out the

<sup>1</sup> Journal A. M. A., Vol. lxiv, p. 425, 1915.

<sup>2</sup> Med. Rec., Jan. 25, 1915; Surg. Gyn. and Obst., July, 1915.

<sup>3</sup> Med. Rev., Vol. lxxvii, p. 449, 1915.

<sup>4</sup> BOSTON MEDICAL AND SURGICAL JOURNAL, Vol. clxiv, p. 788, 1912.



value of citrate solutions in transfusion and to show that almost any method can be made to succeed if this is used.

An adequate review of the history of the use of citrate solution is to be found in the articles referred to in the first part of this paper and is not considered necessary here.

We think we are justified, from our recent laboratory investigation of these methods, in recommending that every physician who contemplates doing transfusion at all, provide himself with the following apparatus:—

1. Two large (100 and 300 c.c.) glass cylinders. (See cut.) (Easily obtainable at any glass blowers for the small outlay of about two dollars.)
2. Five hundred c.c. in two bottles, of sterile, 2% sodium citrate solution. (This can be sterilized by boiling repeatedly without deterioration.)
3. A glass graduate (25 c.c.)
4. A set of glass syringes. (Two 5 c.c. and one or two 20 c.c.)
5. Two 16 gauge cannula-trochars.

With this layout we feel sure he will be able to do successfully any transfusion that he is called upon to do.

Since the completion of this paper, Simons of Nashville, Tenn., has published the record of three cases (*Jour. A. M. A.*, Oct., 16, 1915), receiving citrate transfusion, who suffered severe shock; and two ended fatally. These are the first instances reported by any one in which any ill effect has been noted with the citrate method. An analysis of Simon's first two cases shows symptoms entirely explainable on the ground of hemolysis which may happen in any transfusion. The reasons for the ill effects in the third case are not so clear.

We do not believe that these three cases should absolutely condemn the citrate method. If other men have had similar results they should be published immediately.

The method is so simple and has been attended by success in so many cases that we believe, when properly safe-guarded as an ordinary transfusion is, there should be no danger from its use.

### INSANITY BY CONTAGION.\*

By B. HENRY MASON, M.D., WORCESTER, MASS.

HISTORY affords us knowledge of psychic epidemics, occurring subsequent to and during the middle ages, that were of a hysterical nature. With the advance of civilization and intelligence, such epidemics in the enlightened part of the world no longer occur, in their former allegorical fulness, with the exception perhaps of certain provinces in Russia, and there because of

\* Read at the meeting of the New England Society of Psychiatry at the Massachusetts School for the Feeble-Minded, Waverley, Mass., Sept. 28, 1915.

an arrest of social development which has left certain remote populations in a state of mental childhood.

There appears to have been a strong religious element in most of the attacks, and the victims were said to be possessed by the devil and were called demonomaniacs.

Such an epidemic is said to have begun toward the end of 1609 in a convent of the Ursulines at Aix by the confession of Madeline de Mandol, a nun, who believed that she was possessed with demons who were operating under the command of a priest, Louis Gaufridi, a man of great honesty and strict morality. He was not able to convince the people that he was innocent, later became insane himself, and was finally burned at the stake. Many convents were the scenes of similar epidemics. The one at the convent of Sainte Brigitte appears to have lasted about ten years.

In 1860, a hysterical epidemic occurred at Versegne in Friuli; and in 1879, the paranoiac epidemic of Arcidosso was brought about by David Lazzaletti, an hallucinated person who believed that he was inspired by God. Though some time dead, it is claimed the prophet still has his followers.

Similar epidemics have been started by religious fanatics in this country. "In 1902," says Jacoby, "the population of a large country town, in Russia, was suddenly seized by a religious fanaticism and rushed into the church, destroying everything and crying, 'The Truth is coming!' They placed on the altar one of their own number, a man of no worth, whom some passer-by had invested with divine power.

Another form of psychic derangement is that of Lycanthropy, in which the victim believes he has been changed into a wolf through the agency of the devil; or the imagined transformation may be into other animals. This manifestation of mental aberration was of frequent occurrence during the 16th and 17th centuries, and isolated instances are now occasionally met with, though with certain modifications.

Tarantism or dancing mania is a form of mental alienation which has prevailed at different times both in Europe and in this country. The craze that has swept the country the past three years as a result of the modern dances is a contagion that might properly be put into the hysterical group.

Contagion when met with at the present time, usually displays itself in a more concrete form than it did a few centuries ago. The nature and degree of the contagion vary greatly. Tanzi states, "There is an hysterical contagion and a paranoiac contagion which form the two opposite poles between which oscillate all the psychical epidemics and all the varieties of communicated insanity."

A careful analysis of cases of insanity by contagion reveals two facts that are fundamental in all such instances. First, there is always a predisposition on the part of the person who is the

subject of the contagion. Very frequently they are members of the same family who have been closely associated for years and whose interests and ambitions are in common. Especially is this an important factor when the secondary patient lived with the individual from whom he received the contagion during the formative or adolescent period of life. Second, the person who is the subject of the contagion is, to a certain degree, vulnerable to suggestion. When the two patients are separated, the one that is the subject of the contagion usually shows early improvement, soon throws off the morbid ideas and rapidly regains his normal mental equilibrium. Occasionally, however, when they have lived together a long time and have shared the same interest, habits, emotions and hopes, the passive individual will retain the delusions that have been acquired long after they have been separated, and possibly never entirely clear up. It is doubtful if insanity can be imposed by contagion upon a sound mind.

A delusive attitude may be imposed by a patient on a healthy person, for illustration: a man during the early stages of a paranoid condition, becomes suspicious of his fellow workmen, feels that his boss shows favoritism in his assignment of work and as a result his mercenary environment becomes unpleasant. He receives the sympathy of the members of his family until his delusional field becomes so complex and his ideas so absurd that they are forced to cease to harmonize with his belief. All persons who have to deal with the general public occasionally come in contact during the routine line of business, with instances similar to the one above cited.

Probably all men who have had experience in an institution for the care and treatment of the insane, have seen cases where a friend or relative harbored the idea that the patient had been "railroaded" or committed to the hospital by "fraud" and that his incarceration was unjust. The patient suffering from a paranoid condition complained of his persecutions. The friend immediately harmonizes with the patient's attitude and forms the conception that the patient is not deranged mentally, is subjected to the abuse of the hospital authorities, the nurses, and his other imaginary persecutors. The friend's activities may lead to wide publicity in the newspapers, or litigation and other annoyances to members of the family, his committing physicians and hospital authorities.

One individual may impose his systematized paranoid delusional concepts upon another who is intellectually weaker than himself. A feeble-minded person may be so weak mentally that the intelligence is, in every respect, unproductive, but if the intellectual powers are but slightly inferior to the normal, then the individual is predisposed to communicated insanity. Jacoby says, "When a paranoiac is a propagandist of mystical ideas, and reigns as sovereign or high-priest, it is the imbeciles who compose his court, and form the majority of his subjects."

A few months ago a man and his wife were patients at the Worcester State Hospital, and will serve as a good example of this form of communicated insanity:

J. G. and M. G. There is nothing of interest in the family history of the husband. He was born in the South in 1874 and came North when six years of age. His childhood was normal and he was a fair scholar. He was never very sociable, and although colored, most of his friends were among the white people. He was a steady and efficient worker. He was married six years before admission to the hospital and his home relations were pleasant.

The onset of his psychosis was gradual. Some time before his commitment, his friends began to notice certain peculiarities in his conduct. He developed the idea that people were jealous of him because he succeeded so well. Later an oppressive atmosphere came over him; he was able to detect a delicate odor for which he could not account, and mysterious things happened about the house. He finally appeared at the police station at 2 a.m., with his wife, requesting aid from the mysteries.

We have no knowledge of the wife's family history. She was born in the South in 1884, and although she attended school till fifteen years of age, she reached only the sixth grade. She lived with her aunt until fifteen, when she left her to go to work. Nothing is known of the patient's life from that time till about two years after her marriage. She has had one miscarriage, no other pregnancies. The history of onset in her case is almost exactly the same as that of her husband's with the exception that she first began to experience these annoyances only a few weeks before her commitment.

On their admission at the hospital, they both harbored the same persecutory ideas. The wife soon showed improvement, became industrious, sociable, and took up a normal mode of living. She admitted that all her suspicions were first uttered by her husband, but that she was convinced of them. When dismissed from the hospital about six months after her admission, she reluctantly admitted that probably she was mistaken about her experiences. The husband's ideas of persecution persisted without abatement throughout his hospital residence, and three months after leaving the institution, although self-supporting, and there had been no gross conduct disorders, his morbid ideas were active and he showed no insight.

At times a common suicide is arranged and may even be carried out. My attention has been called to an instance where two women committed suicide by drowning. One evidently suffered from a psychosis allied to manic-depressive insanity. It was claimed that there was no case of insanity on either side of her family. However, nothing was known of the father, and five of her brothers and sisters died in early childhood.

The other was a case of dementia precox with a marked history of heredity on the maternal side. She had made two former attempts to end her life. Both made marked improvement under institutional care and treatment so that they came to lead a very normal existence. They were transferred to a front ward, became ac-

quainted, a marked friendship developed between them and they were finally given parole of the grounds together. One day they failed to return at the usual time, and although a vigilant search was conducted, no trace of either could be found. A few days later their bodies were found near the shore of a body of water, where they had evidently walked in and together committed suicide by drowning.

It sometimes happens that insanity makes its appearance simultaneously in two people, usually who are closely related, when it is impossible to say which one may be the subject of the contagion.\*

E. S. and A. S., two brothers, both patients at the Worcester State Hospital a few years ago, were born in New Hampshire, the older in 1871, the younger in 1873. Their paternal grandparents both lived to be over eighty. Their maternal grandmother had an attack of apoplexy at 80 and died a few months later. The maternal grandfather died of "softening of the brain" at the age of 77. An uncle was looked upon as a crank. Their mother was always regarded as queer and their father was a man who always kept his own counsel and had little to do with his neighbors, but was kind and obliging in cases of illness or misfortune of an acquaintance. Both boys had a regular childhood. They began school at the usual age and did very well in their studies. They left school together in 1891. They were always closely associated; did not care much for the company of others, but played together. The family and acquaintances always looked upon the younger as the leader, the originator; the older as the more silent and reserved.

After leaving school, they planned to begin college work the next fall, but the younger was not able to because of ill health, and the older would not go alone. A year later they went into vegetable gardening, at which they were successful, and continued until their commitment.

The onset, as observed by their parents, was absolutely sudden. About 7 p.m. both gave a scream and for three hours marched up and down from parlor to kitchen with loaded revolvers in their hands, but did not at any time threaten their parents. They said nothing and did not respond to questions. At the end of three hours, the older being exhausted, lay down on a bed that had been prepared for them in the parlor. The younger stood immovable for three hours more by the side of the bed. After that, they talked for a long time before going to sleep. The next day they did the chores, as they had been accustomed to do, as if nothing had happened. Another psychic episode led to their commitment two days later.

On admission, December, 1896, when taken to the ward, they kept step perfectly, each stepping with the right foot heavily. After their arrival at the ward, their behaviour was almost exactly the same, the older, however, setting the example and the younger imitating. At supper, the younger started to eat, but upon being advised by the other not to do so, stopped. They sat through the entire meal looking vacantly forward, occasionally spitting across the table. It required the combined efforts of four attendants to separate them at bedtime. The following morning, when visited by the physicians,

they were sitting on a settee, assuming the same attitude, the younger imitating the older in all his movements. They were made to walk down the hall, when they went hand in hand, and on again arriving at the settee, marked time until stopped and made to sit down. Later, when water was brought for them in a cup and a tumbler, they refused to drink until both were furnished in the same kind of a dish. Both drank simultaneously, taking down their glasses simultaneously. At the dinner table, they were placed directly opposite one another, but this time, instead of spitting across the table, spat in the middle of it.

A few days after their admission, they were separated by being placed in different wards. During their hospital residence, they both led the life of a catatonic dementia precox, characterized by mutism, food refusal, negativism, irritability and impulsiveness. The younger showed marked improvement for a time after being isolated, but his condition soon became stationary and remained so for several months. The older improved so that he was allowed to go home on a visit July, 1897, and was discharged as recovered two months later. The younger left the hospital October, 1898, on a 60 days' trial visit, and was discharged at the expiration of that time improved.

*Subsequent History.*—The older after his return home, according to his father, led a normal existence, with the exception of occasionally talking to himself and staring about in a peculiar manner at times. February, 1903, nearly six years after being discharged from the hospital, he went to Lowell, was arrested for misconduct and committed to the Worcester State Hospital the same day. He escaped from the lawn the following June and was discharged in September. Following his escape, he was arrested in Pennsylvania for carrying concealed weapons, in Connecticut for walking a railroad track, and in New Jersey for larceny. While waiting trial, he was allowed to go to Massachusetts, accompanied by two officers, to show them where a quantity of plunder was hidden. He led the officers into the woods and made a dive for liberty. He was tried for this offence and sent to the hospital for the criminal insane at Bridgewater by the Superior Court, June, 1904, where he is still a patient.

The younger, after leaving the hospital, took up his former occupation of vegetable gardening. Although quiet, reserved and peculiar in some ways, he is spoken well of by his neighbors, and is said to be one of the best poultry men of his town.

#### CONCLUSIONS.

1. Insanity by contagion, when met with at the present time, is more infrequent in its manifestation than it was a century or more ago.

2. It is probable that contagion occurs only in correlation with some underlying mental disorder.

3. A mild contagion may be met with when a presumably normal individual adopts a delusive attitude, but in whom a diagnosis of communicable insanity would not be justified.

4. One mentally deranged, usually of a paranoid bearing, may impose his delusional conceptions upon one whose mental caliber is below the normal.

\* "Folie à deux" of the French writers.

5. A person hereditarily predisposed to insanity may be the subject of contagion when intimately associated with an insane individual.

6. The manifestations of mental disease may be simultaneous in two or more persons with an insane family taint.

## NOTES OF A CONFERENCE ON THE MEDICAL AND SOCIAL ASPECTS OF SYPHILIS OF THE NERVOUS SYSTEM.

HELD AT THE PSYCHOPATHIC HOSPITAL,  
MAY 27, 1915.

(Continued from Vol. clixiii, No. 27, page 1001.)

### VIII.

#### LATENT NEUROSYPHILIS AND THE QUESTION OF GENERAL PARESIS—*Sine Paresi*.\*

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AND

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WE wish to draw attention to a group of neurosyphilitic cases hitherto undescribed. The evidence for neurosyphilis in this group, of which four cases are presented in full, is (a) positive Wassermann reaction in the serum, (b) positive Wassermann reaction in the spinal fluid, (c) pleocytosis, (55 or more cells in the c.s.f.) in the spinal fluid, (d) excess of globulin (Nonne-Apelt test), and (e) of albumin (Metschikoff test) in the spinal fluid, together with (f) gold sol reaction in the spinal fluid consistent with neurosyphilis. Cases showing such immunological, cytological, and clinical features must in the present phase of syphilography be regarded as *syphilitic*, even though the presence of spirochetes has not been demonstrated. Moreover, the diagnostician would be safe in arguing an active process in the nervous system or its membranes, to which process it would be probably safe to give the name "*chronic inflammation*." The chemical changes in the spinal fluid would seem to warrant the idea that such cases are in some phase of *neural degeneration*, though

\* Being S. B. I. Contribution whole number 139 (.915.22). The general conclusions of this paper were read by Dr. Solomon at the April meeting of the Boston Society of Psychiatry and Neurology. (Bibliographical Note.—The previous contribution was by H. C. Solomon and H. I. Koeford, entitled "The Significance of Changes in Cellular Content of Cerebrospinal Fluid in Neurosyphilis," BOSTON MEDICAL AND SURGICAL JOURNAL, Vol. clixiii, No. 27, page 1001.)

whether such degeneration is recent, subacute, or of long standing could not with certainty be stated.

In passing, it may be noted that each of the tests, (a) to (f), as above enumerated, is beset with certain technical difficulties, so that no cautious worker is disposed to accept everybody's offhand conclusion as to laboratory interpretations in these fields. Yet it seems likely that no one will bring in question cases in which all six tests are positive, since it is decidedly improbable that technical errors and errors of laboratory interpretation could conspire to yield positive but erroneous results in all six tests. For this reason we have chosen to present the four cases in question, omitting other cases in which fewer tests have been performed. Further down we present special features in the laboratory results having a theoretical bearing on general conclusions.

As indicated by our title, we are inclined to think that the laboratory findings point, not only to chronic inflammatory central neurosyphilis, but to that particular form of parenchymatous neurosyphilis known by its clinical name as general paresis. It must be confessed that generally speaking, the distinction of paretic from non-paretic forms of central neurosyphilis, none too easy on any grounds, is equally dubious from the standpoint of: (1) The six tests enumerated at the head of this article, as from (2) the bedside and (3) the post-mortem analysis.

Our reasons for terming these cases "*general paresis from the clinical laboratory point of view*" are naturally derived from the data of tests (c) and (f), since the spinal fluid cytology and the gold sol reaction alone exhibit conditions at all convincingly differential between the paretic and non-paretic forms of central neurosyphilis.

The interpretation of the spinal fluid pleocytosis, is between paretic and non-paretic neurosyphilis, is not attempted by most clinical laboratory workers. To be sure, it has been asserted that 100+ cells in the course indicated non-paretic syphilis and that 4-100 indicated paresis; but this simple distinction has not been substantiated, since a single case may run a large gamut from 4 to 200 or more.

We have been inclined to carry over the results of well-recognized post-mortem work to the clinical laboratory. Plasma cells are, of course, not pathognomonic for any disease whatever, although they may be thought to be far more characteristic of chronic than of acute disease (but one must remember the acute interstitial nephritis of Councilman). And it is, of course, generally accepted that plasmocytosis characterizes tuberculous as well as syphilitic meningitis and meningo-encephalitis.

But, as Alzheimer has carefully worked out, plasma cells are far more characteristic of the paretic form than of the non-paretic form of central neurosyphilis. His post-mortem micro-



scopic studies of paresis and neurosyphilis indicate that, whereas plasma cells may occur in neurosyphilitic brain tissue, they occur in far smaller numbers. We have accordingly felt that the spinal fluid, clinically examined, was rather more likely to be paretic than non-paretic if plasma cells occurred. To be sure, the meninges do not contain, even in pronounced paresis, any such quantity of plasma cells as do the perivascular sheaths of the brain tissue. The plasmocytosis is a sign more of encephalitis than of meningitis. Clinically, of course, the lymphocytes far outnumber all other cell types both in non-paretic and in paretic neurosyphilis.

Accordingly, we present for what it is worth the fact that plasma cells were found to an appropriate degree in all these cases and indicate, so far as they go, paresis rather than non-paretic lues.

Turning to the gold sol reactions, we find, as stated, conditions consistent with syphilis. One case of the series (W. D.) showed a curve characteristic of paresis. The other three yielded curves of the same general form, but not such as are most characteristically or most frequently found in paresis.

According to some previous work of this laboratory, the process of flaking out of colloidal gold, which at the end of the standard period of observation (12 to 24 hours after the tubes are set up) yields the typical paretic curve, is a process that passes through phases suggestive of non-paretic syphilis. Observation of the tubes, at say, one hour or less after setting-up, shows the syphilitic curve even in series that are eventually to show the paretic curve. It is as if the undifferentiated non-paretic process was in some sense quantitatively less thoroughgoing, as it were, suspended in its course toward the paretic curve.

Finding one case with a typical paretic curve, we felt that the others might possibly be tending in that direction. At any rate, there was good evidence that a case with all known laboratory signs of paresis, including typical gold reaction, convincingly positive, could exist without clinical signs or symptoms of paresis.

Work from the laboratory has also shown that histopathologically typical paresis (post-mortem data) has evinced *intra vitam* the weaker gold sol spinal fluid reaction characteristic of undifferentiated neurosyphilis. And (as may be seen below in case of E. H.) a characteristic paretic reaction at one time may be followed by one of lesser intensity from the fluid of the same individual drawn at a later time. These findings led us to present these four cases in one group.

Presenting no such symptoms or signs, they have come to be given by us a variety of designations, such as latent neurosyphilis, or paresis, laboratory neurosyphilis or paresis, serological neurosyphilis, etc. For the paretic group, we

have assigned in practice names like pre-paresis, *paresis sine paresi*, non-paretic paresis.

These designations are far from exact. Pre-paresis, for example, is a term which has been used for a supposed group of general paresis cases, with symptoms and signs enough to warrant the diagnosis, but such that they could be cured, relieved or protracted by anti-syphilitic treatment. The doubt always remained whether such cases, antedating modern laboratory methods, were really cases of general paresis. Only time can tell whether our cases will go on to the eventual exhibition either of neurosyphilis signs and symptoms or of paretic ones.

Offhand, the question might be raised whether we are not perhaps dealing with phases of remission in neurosyphilis or paresis. The histories given below show that this can hardly be the case.

The flood of current literature on the general topic of neurosyphilis and paresis seems to be devoid of cases of this description. The reason that they have come to us lodges probably in the peculiar and to some extent unique nature of the Psychopathic Hospital clinic. We practice the Kraepelinian precept of giving every case with mental symptoms the benefit of a Wassermann serum test. The routine practice of this test naturally uncovers a multitude of unsuspected sins, as well as numerous cases of *lues insontium*. Cases with positive serum we believe deserve, on every ground, a test of the spinal fluid. No present work exemplifies the importance of this matter.

The systematic literature is virtually silent as to latent cases of the group we here describe.

Much has been said as to the early diagnosis of general paresis. Little has been said, however, as to the diagnosis of a syphilitic involvement of the central nervous system as shown by these same signs before the beginning of symptoms. Interest has recently been aroused as to the finding in the fluid in the early stages of syphilis. This will no doubt throw great light on the later development of such a condition as general paresis. Still we have little or no knowledge as to the condition of the fluid prior to the onset of symptoms. Systematic works on syphilis of the nervous system or on general paresis give us practically no information on the conditions antedating the outbreak of symptoms. Thus Nonne in his *Syphilis und Nervensystem*, 1910, makes no mention of this matter. The article on Dementia Paralytica by A. Hoche in Aschaffenburg's *Handbuch der Psychiatrie*, published in 1912, offers no word on this subject. The following quotation taken from Moore's translation of Kraepelin's discussion of general paresis in the last edition of his text-book has no real bearing on the conditions existent before the outbreak of symptoms. He says: "The actual beginning of paresis consists, as a rule, of rather indefinite symptoms, which are usually interpreted as nervousness. They are apt to be excitability, a hasty, excitable, irritable, or

whining manner, anxiety states, absentmindedness, fatigability, mental dullness, forgetfulness, a tendency to sleep or persistent sleeplessness. Accompanying these are headaches, migraine with scotomata and vomiting, giddiness, cardiac palpitation, excessive sweating, rheumatoid pains, numb feelings, muscle twitchings, writer's cramp, brief weaknesses, abdominal cramps, intestinal obstruction. In the further course the mental and physical symptoms may progress collectively or individually with very irregular rapidity. Thus there are cases in which even severe disturbance of speech and writing with tabetic signs and lost reflexes may exist for a long time before any marked involvement of memory or intellect can be discovered. On the other hand, the mental symptoms may be fairly prominent, while physical examination reveals at first only indefinite and non-characteristic changes. This fact furnished a wide opportunity for errors in either direction, before the cytological and especially the serological tests afforded us a means of verifying our opinions even in the earliest stage of the disease."

Kraepelin here speaks of verifying our opinions. But suppose we had applied these cytological and serological tests a time previous to even the slightest suggestion of mental disorder, what then would have been the result, and if positive, how much could we argue as to the future course?

The following four cases are in point:

**CASE 1.** M. J. G. (1) Patient was admitted to the Psychopathic Hospital Dec. 30, 1914, being brought in by the police on the request of his wife, who stated that patient had threatened the lives of her and the children. Patient denied that there was any truth in this accusation, but admitted that he and his wife had a quarrel.

**Family History.** Grandparents died in old age. The father died at 53 of septicemia, was moderately alcoholic. Mother living and well at 72 years of age. Three maternal uncles, 6 maternal aunts. One uncle died in an accident, one died at 73, one a deaf mute (cause said to have been measles), died at 23 of "throat trouble." Two maternal aunts died in childbirth; four died in infancy, causes unknown. Patient's wife states that the father had tuberculosis and that the mother is alcoholic.

**Siblings.** (1) Boy died at 4 months from "influenza." (2) Patient. (3) John, died at 27, from pneumonia. Moderately alcoholic, married, no children. (4) Edward, died at 23 from tuberculosis. (5) James, 33, living and well. (6) Mary, 30, living and well. There were three stillbirths. Informant disclaims knowledge of nervous or mental disease or excessive alcoholism (except in one maternal uncle).

**Past History.** Patient was born 43 years ago, normal delivery and development. Has always enjoyed good health. He had measles and pertussis in childhood. Once had a small abscess on the neck. Some "rheumatism" since marriage. No headaches, no convulsions. Venereal disease denied by name and symptoms. Patient was married 18 years ago, the marriage being compulsory. Wife's health has been good. The first pregnancy resulted in a stillbirth. There are five children living and well. One

miscarriage 4 years ago. Wife states that patient has been alcoholic for at least 19 years, that he has been arrested six times for drunkenness over a period of more than 8 years; he has twice served sentences at Deer Island for drunkenness and non-support. He describes the symptoms of an attack of delirium tremens a number of years ago. Wife further states that their married life has never been happy, that they have quarreled a great deal and that she has left him several times. She says he has always been erratic, excitable, quick tempered, jealous, lacking in a sense of responsibility, and showed little regard for his children. Wife has been instrumental in several of his arrests.

**Present Trouble.** Just before Christmas patient accidentally discovered that wife had purchased a bill fold without his knowledge, and he could not imagine where she had obtained the money. A quarrel ensued and then she reported him to the police. The police called at his house, but found him quiet and well possessed, so did nothing about it. Patient then went to the police station to inquire of the captain the reason for the visit. The captain interviewed the wife and then had patient sent to Psychopathic Hospital for observation. Wife's statement was that patient "had walked up and down the room like a maniac, and stated" that there would be a tragedy in South Boston," which she interpreted as a threat. The wife is said to be a trouble-maker and not over-reliable.

On admission to hospital the patient was quiet and showed no conduct or emotional abnormalities.

**Physical Examination.** (Jan. 1, 1915.) Well developed and nourished, pleasant appearing man of middle age. Hair plentiful on head, slightly tinged with gray. Head presents no scars or lesions. Face is symmetrical. Eyes and ears negative to external examination. Throat shows nothing of note. No thyroid enlargement, no visible pulsations in neck. **Glandular system:** No general adenopathy, some small shot-like glands palpable in the inguinal regions. **Chest:** Negative. **Circulatory system:** Cardiac impulse neither seen nor felt. The heart is not enlarged; the area of relative cardiac dullness is 10½ cm. to the left and 2½ cm. to right of mid-sternal line; upper border of dullness in third interspace. Sounds regular and of good quality; no murmurs heard. Rate 64 per minute. Blood pressure: systolic 130, diastolic 90. Radials not sclerosed, easily compressible. Pulses are regular, equal and synchronous. **Abdomen:** level with the thorax, muscular development is good. Upper border of liver dullness at fifth space; lower border not felt. Spleen not felt. No tenderness or spasm anywhere in the abdomen. Venereal disease denied. **Skin:** Uniformly of good quality. A few minor superficial scars on legs and shoulders. **Extremities:** Hands, cold and cyanotic. No deformities. Slight varicosities of both legs. No edema.

**Neuromuscular system.** Pupils are equal, very slightly irregular, especially when fully dilated, and react promptly to both light and accommodation and consensually and hold well. Extraocular movements well performed. No nystagmus or strabismus, no diplopia, no ptosis. Visual fields normal. No facial palsies or weakness. Audition good, air conduction better than bone conduction. No tremors of face. No difficulties of deglutition. No speech defect. Tongue projects medially without tremor. Pharyngeal reflex active. Biceps and triceps reflexes are active and equal on the two sides. There is no tremor of the outstretched hand. The

abdominal reflexes are obtained equally in the four quadrants. Cremasterics are equal on the two sides. The knee-jerks are very lively, equal on the two sides as are the Achilles. No patellar or ankle clonus. No Babinski, Gordon or Oppenheim. No Romberg. No gait disturbance. Deep muscle and joint sense good. Cutaneous and pain sense unimpaired. No ataxia in finger-to-finger and finger-to-nose tests.

Urine examination negative.

Wassermann reaction in the serum. Positive cholesterinized antigen, negative with fetal syphilitic antigen.

Wassermann reaction in the spinal fluid(?)

Globulin++++ albumen +++, cells 113 per cubic c.mm.; small lymphocytes, 84.1%; large lymphocytes, 14.5%; plasma cells, 0.8%; endothelial cells, 0.6%.

Gold sol reaction, 443+332±1±00.

Mental examination disclosed little of note. The orientation was intact. Memory for remote and recent events was excellent; school knowledge was well retained. He showed an excellent grasp on current events. There was no evidence of hallucinations. The flow of thought was connected, fluent, relevant. The emotional reactions seemed normal. In the hospital his conduct was in no way remarkable. The only thing at all suggestive was his ideas about his wife, showing some jealousy and anger on account of her part in his former arrests and present detention. Still there was some evidence that these were not without cause.

We see then a man with a history of alcoholism lasting over a period of at least nineteen years, who during this period had much trouble with his wife, who on several occasions had had him arrested, and who once more on account of difficulties with his wife was arrested and this time sent to the Psychopathic Hospital. His physical and mental examination proved to be essentially negative, and before the report of the Wassermann reaction and examination of the spinal fluid the diagnosis was made of chronic alcoholism, not insane.

On account of the serological findings it was considered advisable to have the patient investigated further and he was committed to the hospital for sixty days' observation. However, during his stay in the hospital until his discharge on Feb. 17, 1915, fifty days, nothing transpired that suggested a psychosis. On Jan. 22, he was presented at staff meeting and his case carefully discussed. There happened to be present at this meeting several superintendents and clinical directors of other state institutions beside the staff of the Psychopathic Hospital. All concurred that there was insufficient evidence to make diagnosis of a psychosis, and it was generally agreed that if there was a paranoid condition showing itself in jealousy and irritability, it was more likely due to alcohol than to syphilis.

On Feb. 15, 1915, the examining physician reported to the court: "While his blood and spinal fluid show a positive Wassermann, indicating probable beginning general paresis, yet his mental condition is not such as to warrant his commitment as insane, and we therefore recommend that he be discharged."

CASE 2. E. H. (1) Patient was admitted to the Psychopathic Hospital, Oct., 29, 1914, being sent here from a general hospital where he had gone on account of a self-inflicted wound of the wrist, ap-

parently made in a period of depression with suicidal intent.

**Family History.** Paternal grandparents both died of heart disease. Maternal grandfather died at 72 of dropsy. Moderately alcoholic. Maternal grandmother died of shock at 56. Father died at age of 40, after an illness of eight years, from heart disease. All his life was subject to fainting spells and headaches. The only paternal cousin died at 13 months of brain fever. Mother, aged 47, is to say the least, eccentric. Says "she has several times been given up from tuberculosis." Mother married twice. Two maternal uncles died of tuberculosis, one from a rupture, one from heart disease. One uncle who "doesn't know anything after he has a teaspoonful of liquor." Several other uncles and aunts whose history is not obtained. Patient is mother's only child. There were several miscarriages by both husbands; patient child by first marriage.

**Past History.** Patient born 32 years ago, full term, normal delivery and development. Measles, mumps and chicken-pox in childhood. Subject to headaches since seven or eight years old. Kicked in the face by horse at 17 or 18, not considered serious. Hit by a baseball three or four years ago leaving him hard of hearing on left side. Married ten years ago; no children because he says his wife needed an operation. He denies venereal disease by name and symptoms. For past 10 years has had attacks of depression lasting but a short time, but quite severe. Never caused him to quit work as a barber and he felt better when working. His married life he says was fairly happy except for his wife's extravagances, and on this account he left her a little over a year ago, and she has applied for a divorce, which he is willing that she should have, but does not wish to give her alimony. He admits moderate alcohol.

**Present Trouble.** Patient states that since he left his wife a year ago he has felt sorry a number of times. He has wished he had her back. He has felt lonely. He has had 6 or 8 periods of depression in that time similar to those he has had for many years, lasting two to three days, and sometimes a week. These were always precipitated by some cause for worry. In these attacks he feels nervous, sleeps poorly, has little or no appetite, sweats during his work, and everything looks black. Several times in these attacks he has had suicidal ideas. Ten months ago he considered taking corrosive sublimate. For a little over a week before entrance to hospital he had been out of work and had been "sporting." The day before entrance he had a telephone message from his lawyer which upset him somewhat and he walked the floor all night. He had just been shaving when the idea of suicide came to him. He sat down a minute when suddenly the thought "to hell with the world" came to him, he took the razor and slashed his wrist. He does not remember drawing the razor across his wrist. As soon as he saw the blood he felt sorry, called his mother and was taken to the hospital and then sent to the Psychopathic.

**Physical Examination.** Patient is a well developed and nourished man 32 years of age. Head is normal as to size and shape; there are no scars or marks of injury. Hair and skin not remarkable in any way. Ears negative to external examination. Teeth well kept; two missing, several gold fillings. Tongue very slightly coated. Throat negative. Tonsils easily visible without evidence of inflamma-

tion or exudation. *Neck:* No thyroid enlargement, no abnormal pulsations, no adenopathy. *Chest:* Symmetrical, expansion good, resonant throughout. Breath sounds transmitted normally. No rales or rubs heard. *Heart:* No enlargement or cardiac dullness. Sounds of good quality, no murmurs heard. Rate regular. Pulses equal, regular and synchronous, and of good volume and tension. Systolic blood pressure 130, diastolic 65. *Abdomen:* Flat, soft and tympanitic throughout; no masses; no tenderness. Liver edge not felt below costal margin. Spleen not palpable. *Extremities* negative, except for incised wound on left wrist.

*Neuromuscular Examination.* Pupils are large, round, regular, equal, and react readily to light and accommodation. No nystagmus, strabismus or ptosis. No weaknesses or paresis of facial muscles. The tongue projects medially and shows no tremor. The triceps and biceps reflexes are readily elicited and are quite active as are the knee jerks and ankle jerks. On one occasion it was thought that the tendon reflexes were slightly more active on the left than on the right. This was never confirmed and always after found equal. There was no tremor of extended hands. Abdominal reflexes not elicited. Cremasteric present on both sides. The Plantar response is flexor. There is no Babinski, Gordon or Oppenheim. No Romberg. Coordination tests well performed. No speech defect. No sensory disturbances. Urine examination negative.

Wassermann reaction in serum: Positive with cholesterinized antigen; negative with syphilitic fetal liver antigen.

Wassermann reaction in fluid positive on two occasions. Examination of spinal fluid Nov. 4: Globulin +++, albumen ++, 100 cells per c.mm., large lymphocytes, 8%; small lymphocytes, 90%, plasma cells, 0.7%. Endothelial cells, 1.3%. Nov. 11, globulin +++, albumen +++, cells 18 per c.mm. Nov. 26, globulin ++, albumen ++, cells 92 per c.mm. Large lymphocytes, 13.1%; small lymphocytes, 82.1%. Plasma, 1.2%. Endothelial 3.6%.

Gold sol. Nov. 4, 5555432100.

Gold sol. Nov. 26, 3332100000.

*Mental Examination.* On entrance to hospital patient seemed slightly depressed and a bit irritable. This condition lasted two days, after which he was agreeable and apparently entirely over his depression. Even during his mild depression, however, he talked freely. There was no evidence of retardation. He told his story readily. Orientation was intact. Memory excellent. Educational knowledge well retained. There was no evidence of any hallucinations or delusions.

There was then on the mental and physical examination nothing to make a definite suggestion of a psychosis, and the most one could think of was a psychoneurosis or a cyclothymia of at least ten years' duration. The findings in the cerebrospinal fluid and the Wassermann reactions, however, give us material for thought. Certainly one cannot call the man insane; all who saw him agreed on this point.

CASE 3. W. D. (1) Patient on entrance to hospital March 23, 1914, was very excited. He was arrested for shouting and blocking traffic.

The physical examination at this time is entirely

negative. Patient is a large, well-developed man. The general system shows no abnormalities. The pupils are round, regular and equal, and react readily to light and accommodation. There is no muscular weakness or palsies. The tendon reflexes are all normally present and equal on the two sides. There is no Romberg, no ataxia, no sensory disturbance. There is some slight tremor of the extended hands, apparently the result of alcoholism, which disappears in the course of several days. There is no speech defect, no difficulty in writing. Diadochokinetic movements well performed.

The day after entrance patient had a seizure without loss of consciousness, characterized by rigidity of the body. The right arm was raised above the head and patient stared straight ahead. There was no movement in the muscle groups other than those necessary to bring the arm above the head. Lacrimation was increased, the head turned to the right. No reaction of the pupils demonstrable, knee jerks and Achilles jerks not changed. There were several loud screams during the attack, which lasted but a couple of minutes. After about one minute, when spoken to, patient turned toward examiner, breathing stertorously and moaning slightly. He composed himself on the bed and after another moment was ready to talk. He said he saw everything light up in front of him. He remembered the examination that was made.

Mental examination on admission showed that patient was very active and tended to be euphoric. He laughed frequently and often apparently without reason. He was very playful. He was well oriented. Memory for remote and recent events good. School knowledge well retained. Grasp on current events good. No delusions or hallucinations made out. At the end of a week he was quiet, no longer tended to be euphoric, playful or break out with uncontrolled laughter. He realized that he had been "nervous" and not himself.

He admits alcohol to excess for many years. Had delirium tremens several years ago in Chicago, at which time he was in a hospital. At other times when drinking heavily he had auditory hallucinations. None for several years, however. Two years ago he was in the Boston State Hospital for a time for an attack of maniacal excitement, where the diagnosis of manic-depressive insanity, mania phase, was made. He recovered shortly and was discharged.

The routine Wassermann reaction on the blood serum was reported positive. Lumbar puncture was performed. The findings were: globulin +++, albumin +++, cells 121 per c.mm. Gold test typically for general paresis, 5555321000.

By the time the spinal fluid findings were reported patient had entirely cleared up mentally so that aside from the laboratory findings there was nothing of note either mentally or physically.

The patient remained in the hospital until July 22, 1914, during which time he has had some treatment. During these four months of observation there appeared no psychotic or physical sign other than already noted.

CASE 4. F. B. (1) Patient was brought to the hospital by the police. He was charged with having forged a check and on account of the crudeness of the work, his mental condition was suspected.

*Family History.* The paternal grandfather was considered fast, drank a great deal and was said to be a thief. The father is said to have been forced to



leave the state when a young man in order to avoid the reformatory. Paternal cousin murdered a man; the sisters of this cousin said to have been wild and one brother married a prostitute. Nothing known of maternal relatives.

**Past History.** Medical history is unimportant. He denies syphilis. His early childhood is of little significance. He was somewhat dull in school. At about the age of 19 he began to lie and steal, and has continued this ever since. His attempts have all been very crude, it is said, and when confronted he would strenuously deny his deeds even when the evidence was overwhelming. He forged checks, borrowed money from all his friends, and charged things at stores to the family. The family paid the bills for a time and then later had him sent to a reform school. He was married at 19, but wife has left him and obtained a divorce. He has been excessively alcoholic for years and is suspected also of taking drugs. He was discharged from the navy dishonorably. He later joined the army and was discharged from there on account of "rheumatism," according to his account, but in reality deserted. He finished a jail sentence of 13 months for forgery a little over a year ago.

**Physical Examination** shows a well developed and nourished man. The general physical examination is negative. The lungs show nothing abnormal. The heart is not enlarged, there are no murmurs or irregularities; blood pressure 145 systolic. The alimentary system is negative. No palpable lymph glands. **Neuromuscular examination:** Pupils equal and react to light and accommodation. Extraocular movement well performed. Tongue projects in the median line, with no tremor. There is no evidence of facial paresis or weakness of the muscles. The biceps, triceps, knee jerks and ankle jerks are present and equal on the two sides. There is no Gordon, Babinski, or Oppenheim, no ankle clonus. There is no tremor of the extended hands. No Romberg sign. There is a little difficulty in the finger-to-finger test. There is no sensory disturbance either subjective or objective. No tenderness over nerve trunks.

**Mental Examination** shows nothing of a psychotic nature. Patient is well oriented; memory for remote and recent events is well preserved, school knowledge well retained, grasp on current events good; no delusions or hallucinations elicited. Patient is not feeble-minded, according to the intelligence tests of Binet and Simon, and Yerkes-Bridges, but shows poor attention and gives evidence of weakness in the volitional spheres; is very suggestible.

To summarize the case, then, we have a man of 30 years of age who has shown criminalistic and anti-social tendencies since childhood, whose general physical and neurological examination is negative (excepting the laboratory tests), and whose mental examination shows no psychotic symptoms, that he is not feeble-minded. In other words, with the exception of the serological and chemical findings in the blood and cerebrospinal fluid, there is nothing to suggest that he is more than a criminal type.

Wassermann reaction in blood serum positive.

Wassermann reaction in cerebrospinal fluid. Examination of cerebrospinal fluid: globulin ++, albumen ++, cells 55 per c.mm. Large lymphocytes, 9.1%; small lymphocytes, 90%; plasma, .9%. Gold sol reaction, 3+3+ 2 1 0 0 0 .

These four cases have in common the laboratory tests characteristic of general paresis or cerebrospinal syphilis, and yet no other signs or symptoms that would cause us to consider these diseases. In no case was general paresis considered until the results of the blood serum, Wassermann and spinal fluid findings had been reported. Repeated examination with this knowledge in mind still did not disclose anything to suggest syphilis of the central nervous system. It is true that in one case (W. D.) the slight convulsive seizure might be considered a parietic phenomenon, but in the light of the alcoholic history it was considered as a phenomenon of alcoholic epilepsy.

Further, these four cases show some evidence of psychic peculiarities existing over a period of a number of years. We refer to excessive alcoholism, delirium tremens, hallucinations of an auditory character, marked irritability, criminalistic tendencies, or depression. In other words, these cases had for years exhibited phenomena such as were the immediate cause of their being brought to the hospital, and if one suspects these peculiarities to be mental phenomena of paresis, one has to consider that they have lasted for more than ten years without progressing and without exhibiting any physical signs.

It is at least certain that these patients have some form of cerebrospinal syphilis. It is quite true that we have no way of prophesying the outcome. This may simply be the very early stage of a general parietic process before the mental and physical symptoms have appeared. In that case the prognosis would seem to be very poor. Is this the usual story of paresis, that the serological findings are present long before the symptoms of the disease?

This would have a considerable bearing on the question of allergie that has recently been so much discussed, especially by Swift and Ellis, and Head, Fearnside, Fildes and McIntosh. We know that certain cases of paresis which at autopsy show marked pathological changes characteristic of this disease may show symptoms for a comparatively short time. These findings may be the result of a small focal area of spirochaetosis, a localized meningitis. Still this means a syphilitic infection of the central nervous system. While it is possible to conceive of stationary conditions, such as we find late in tabes, yet this is not a safe idea to go on, and in such a case the serology is negative.

In this relation it is interesting to recall that paresis not infrequently first shows its symptoms as the apparent result of head trauma. Mott says that this is the exciting factor in a number of his cases. This would leave no other explanation but that the process was already in progress but showed no symptoms. In other words, this would represent theoretically the condition that we have found practically in these cases.

Here we are again brought to the consideration of treatment. Despite the various methods

of attack, and the occasional enthusiastic reports, the general consensus of opinion remains unchanged, that there is no method of therapeutically affecting general paresis. On the other hand, since the work of Fournier, it has been held that syphilis well treated but rarely leads to paresis. Somewhere, then, after the infection, there comes a time before which treatment is of great value and after which it is of little avail. Recent work has tended to show that involvement of the central nervous system is a not uncommon occurrence in the secondary stage of the disease (Weil and Stokes), so that this is not merely a question whether or not the central nervous system is involved. *A priori*, there is nothing to argue against the possibility of therapeutic result at this stage of central nervous system syphilis, and we may in this way be able to prevent general paresis or cure it if we consider this condition general paresis.

It may be held that it is not possible to speak of paresis without symptoms other than those shown by the laboratory. Would one hold the same viewpoint in regard to the diagnosis of nephritis and diabetes from the urine findings?

There is a condition called latent syphilis, the relation of which to active syphilis is very similar to that of this *latent neurosyphilis* to the more active forms.

One illustration of this relation of latent syphilis and neural syphilis is found in the so-called neuro-recidive. In these cases there is for a time only a positive Wassermann reaction, with no subjective or objective symptoms. Suddenly something happens, perhaps an ocular palsy, perhaps a ptosis. There is no question here but that we have been overlooking in such a case the real significance of the positive Wassermann when we said "latent." So much more have we no right to take this attitude in the cases above described where there is definite evidence of an inflammatory reaction of the central nervous system.

One must indeed keep these cases in mind when considering remissions and recoveries of "general paresis" under treatment. We have learned that many cases which, from the mental picture, might be diagnosed as general paresis, show none of the serological findings of this disease. We have also found that certain patients giving the clinical picture of other mental disease, e.g. manic-depressive insanity, will give the six reactions and thus enable us to make a correct diagnosis of paresis very early. This fact is so impressive that it is very easy to feel that the serology is the last word. But when one finds such cases as here described, in which the serology is the same as in true full-blown cases of general paresis and yet no symptoms, either mental or neurological, present, one must admit that the serology is not the whole story. Unfortunately we do not know the prevalence of such a condition. Still, with the frequency of other forms of mental disease, it would not be at

all surprising to find the two conditions existing in the same patient. If such a patient has an attack of manic-depressive insanity, with the serology positive, one would diagnose general paresis. When such a patient then has a remission from the attack of manic-depressive insanity, he would be considered as a remission in paresis. If such a patient then has treatment, one is prone to feel that the recovery was at least in part due to the treatment. Such a state of affairs may be the explanation in the case of F. A., described below. Suppose we had seen M. J. G. in an attack of delirium tremens, such as we had previously, would not we have considered it general paresis? Such was indeed in all probability the situation in the case.

CASE 4. F. A. (1) Patient was admitted to hospital Jan. 1, 1915, in a very much excited condition. The family history is very meagre, and all that is of significance is that mother has always been very "nervous."

*Past History.* Very healthy as a child, and except for occasional throat trouble and headache had no physical ailments until 8 years ago, when she had an operation for appendicitis, and 2½ years ago was operated for hernia and adhesions. Following this she began to show a lack of energy, neglected her housework, was much depressed, wept frequently, complained constantly of pain in various places and was ill-tempered. In about five months she improved, and then after a couple of weeks at the shore seemed entirely well.

*Present Illness.* In November, 1914, that is, about 17 months after the recovery from the previous depression, she again began to show practically the same symptoms. She was depressed, could not sleep and would get up in the night and sew; was self-centered and hypersensitive, then became restless and nervous; wanted to go shopping and out for dinner; went to New York and then to New Bedford. Symptoms became more marked; she became very ill-tempered; threatened her husband when angry over trifles, threatened suicide, then began to get active and spend money extravagantly. At the end of two months, that is, January 1, 1915, she was admitted to the hospital.

*Physical Examination.* A small, thin woman, appearing to be about 45 years of age (actual age 37). Aside from the absence of teeth and the operation scars, the general examination is negative. *Neuromuscular system:* The pupils are round, regular, equal and react to light and accommodation, but do not hold very well. Extraocular movements well performed, no palsies or facial muscles, tongue protrudes medially without tremor. Uvula is raised symmetrically. Biceps and triceps and supinator reflexes are present and brisk. Patellar and Achilles reflexes are equal on the two sides and brisk. Abdominal skin reflexes not obtained. Plantar reflex active and flexor in type. No Babinski, Gordon or Oppenheim. No tremors.

Wassermann reaction serum positive.

Examination of spinal fluid: clear, globulin ++++ albumen +++++; cells, 130 per c.mm.; small lymphocytes, 79.9%; large lymphocytes, 14.1%; polymorphonuclear leucocytes, 4.6%; plasma cells, 0.7%; endothelial cell 0.7%. Wassermann reaction positive. Gold sol reaction, 55555522±.

*Mental Examination.* On admission patient

showed great psychomotor activity, was very playful, marked flight of ideas, was expansive, very emotional, very erotic. She slept very little, appetite was poor and she lost weight rapidly. Orientation and memory intact. No hallucinations elicited. In about 3 weeks improvement began and at the end of eight weeks she appeared practically recovered. On April 9, 1915, that is, 13 weeks after admission, she was allowed home on visit. On leaving, she appeared normal in every way. There was no evidence of psychotic symptoms, she had good insight, and physically there was absolutely nothing of a neurological nature that was abnormal.

This case, with the history of a previous depression and its clinical picture during the acute stage, and its recovery, is certainly in every respect typical of manic-depressive insanity, and only the positive result of the six tests causes us to put it in the group of general paresis. Only the further course will shed any light as to the correct significance of these findings, and even then we shall not be too sure that we had not been dealing with a manic-depressive psychosis, in a latent neurosyphilitic. We would strongly emphasize the point that at the present time this patient presents no mental or physical signs of cerebrospinal syphilis or general paresis, but the six tests are still positive. This case differs from the ordinary general paresis remission in that there is not a single physical sign of paresis present.

There are many transitional cases between the cases described above, showing no symptoms or signs of neurosyphilis except the laboratory tests, and the typical case of general paresis. Thus we have cases with slight character change and no physical signs except rare "seizures." On the other hand, in many cases the presence of abnormal neurological phenomena without definite mental signs is first noted. Certain remitted cases show only some slight pupillary or reflex abnormality. We believe we have here added the last link in the chain between the primary and quaternary symptoms.

#### SUMMARY.

1. There is a group of cases showing the laboratory signs characteristic of central nervous system syphilis: (a) positive Wassermann reaction in the serum, (b) positive Wassermann reaction in the spinal fluid, (c) pleocytosis, (d) excess of globulin, and (e) of albumin in the spinal fluid, (f) gold sol reaction of central nervous system syphilis, and which show no sign or symptom of neural syphilis.

2. We believe these cases represent a form of chronic cerebrospinal syphilis, probably paretic in type.

3. They have the greatest theoretical and practical significance in the consideration of the life history of neural syphilis, on the concepts of allergy, in regard to results of treatment, and finally as to the evaluation of the laboratory tests.

4. Here is offered the last link to form a complete chain between the symptoms of the primary stage of syphilis and its final termination of life as the result of the diseases cerebrospinal syphilis or general paresis.

(Series to be continued.)

## Therapeutic and Preventive Medicine

### THE TREATMENT OF HEADACHE.

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As a general principle in the treatment of headaches, the greatest care must be taken in making a diagnosis, since a number of different diseases have headache as a symptom which only disappears when the disease in question has undergone its specific therapy. Such is the case in headaches secondary to cerebral tumors, brain abscesses, hydrocephalia, cerebral and cerebrospinal syphilis, progressive general paralysis, circulatory disorders due to heart and pulmonary affections, nephritis, infectious diseases, acute and chronic intoxications, constitutional and secondary anemias, diabetes, and to uric acid arthritis.

In cerebral arterio-sclerosis, the patient's mode of life should be carefully arranged so as to prevent an aggravation of the secondary headaches. Work should be limited or even stopped entirely. Tobacco and alcohol are to be forbidden and everything that can increase blood pressure, especially physical and intellectual effort, sexual excesses and excitement of any kind. Warm foot baths and poultices to the nape of the neck and to the sternum are indicated. Daily and regular stools are necessary, with the aid of a purgative if required. The meat diet should be limited and there should be sufficient sleep. Iodine may be administered in small doses continued for a long period. (Iodide of potassium, (10 to 15 grams, to a two-one hundred solution,) one tablespoonful morning and evening). Or tablets of sajodine at 0 gr. 5 or iodival at 0 gr. 3, may be prescribed three times daily. A combination of sodium bromide, gr. 20 and potassium iodide, gr. 10 in distilled water, is found effectual when taken three to four times daily for four to six weeks. If the pain is unusually severe, atipyrine, phenacetin or pyramidon may be used. Cold applications and ice-bags to the temples also give relief. For some patients, a stay at a high altitude or on the sea shore is to be recommended. For plethoric patients laxative cures at springs like Kissingen, Marienbad and Homburg are indicated. In cases of disseminated sclerosis of the brain and of the spinal marrow, the headaches disappear after three

or four weeks of mercurial treatment. In diseases of the eye when the patient has passed fifty, the headache symptom points to glaucoma and the physician should proceed accordingly. Sun-stroke headache is best treated by a rapid infusion of water by mouth, rectum or subcutaneously. The headaches of hysteria (clavus hysterics) may be dispelled by suggestion either when the patient is in the hypnotic or in the waking state. In gastro-intestinal disorders, particular care should be directed to constipation, as the headaches are frequently caused by violent efforts of the patient at the stools.

Cornu used bromide of potassium in his chronic migraine cases in epileptic and delirious patients. Windscheid has had most success with bromine, and when rheumatism is present, he also recommends active massage. Edinger's unqualified endorsement of massage as a treatment for chronic migraine is due to chronic myositis in the cranial insertion of the muscles of the neck, the splenius, sterno-cleido-mastoid, trapezius, etc.,—and sometimes on a level with the insertion of the temporal muscle. The limited deposits of muscular inflammation were speedily improved by massage in 14 cases reported by Norstrom. Auerbach states that the prophylaxis for migraine is that for diseases of the brain in general—open air life, avoidance of emotion and mental over-exertion, well-regulated hygiene of daily life and absolute abstinence from alcohol. Members of migraine families should interchange activity and rest and not take too great intervals between meals. A biscuit with a glass of milk or a roll would suffice. A too exclusive meat diet should not be permitted. A prolonged stay at the sea or in the mountains may be of benefit, but not less than four weeks.

As for the medical treatment of chronic migraine, the milder forms require none. For the severer forms, the bromides attack the disease itself and combat an increase in the attacks. Auerbach prefers the bromide of soda with a salt-free diet if the action is to be intensified. This bromide cure was recommended by Liveing and by Charcot, and should be repeated several times in the year. Moebius recommended 15-30 grs. of sodium salicylate, antipyrin, 5-15 grs., phenacetin, 10-15 grs., migrainin, 15 grs., pyramidon, 5-7½ grs., and aspirin, 15 grs., may also be tried in a cup of strong coffee with one or two biscuits. For the severest forms, only an injection of morphia (¼-½ gr.) is a certain remedy. Absolute rest in a darkened room and a cold wet compress or ice bag on the head should accompany the above mentioned anti-neuralgics.

In neurasthenic headache, the physician has to consider the fact that the most important factor of nervous debility is heredity, and he should warn every constitutionally neurasthenic person of the important danger for his descendants. Dietetic treatment should tend to combat the bad habits acquired in the mode of life, such

as tobacco, alcohol. If the provocative causes of neurasthenia are to be sought elsewhere, a pint of beer in the evening and ½ cigar may be allowed. Sexual excesses, especially onanism, must be strictly forbidden. With married people, the physician must inquire as to the frequency of marital relations, and whether they are abnormal, interrupted coitus, etc. The treatment for migraine as to intervals of food and rest also applies to neurasthenic headaches. Electrotherapy (galvanization of the head and the neck) is also effectual. Bromine should be used (2 to 3 grs. *pro die* for 3-4 weeks). In grave recalcitrant forms, the patient should be sent to a sanatorium for prolonged treatment, where an isolated room and meals are frequently required. Ziemssen's project of pavilions for the cure of neurasthenia should be carried out for the public hospitals, as some of the severest cases of neurasthenic headaches are amongst the poor.

Nodular or rheumatic headaches may be most effectually combated by manual massage, and the utmost precaution should be taken against chills and abstinence from alcohol strictly enjoined. The head should be raised when sleeping to avoid hyperaemia and women should not wash their hair during the attacks. Afterwards shampoos with spirituous liquids may be permitted. The massage sittings should occur daily for fifteen to twenty-five minutes, during which the chin should be supported by the masseur's hand on the table and the patient should comfortably recline on a chair with a not too high back. Every sitting should be preceded by application of hot poultices (linseed meal or thermophores) to resolve the affected spots on the scalp and in the muscles. If the infiltrations are large and hard, an ichthyol ointment (20%) may be employed. Experiments with radium emanations have recently been recommended for gout and muscular rheumatism.

Auerbach gives the following details as to the massage technic which may be carried out by the physician if the masseur is not especially efficient. One should begin with forcible stroking (effleurage) of both lateral aspects of the neck, from the mastoid process to the acromion, carried out with the flat of the hand. The middle of the occiput and the nape of the neck are then treated in the same way with the right hand (10 times). This action serves to empty all the centripetal lymph vessels. The hair may so far be left undisturbed. For later manipulations the necessary regions must be exposed by parting the hair or throwing it forward in case there should be heavy masses of hair, supporting it on the arm used for massage.

Next follows a thorough kneading (petrissage) of the muscles and of the skin: First, of the left lateral occipital and cervical region as far as the shoulder, then of the central and finally of the right regions. This should be performed with both hands, opposing the other vertically to the course of the muscles to be massaged. The mas-



seur must endeavor as far as possible to raise deeper muscles from their supports and to get them between his fingers. Each kneading should be carried out five times and be followed by vigorous stroking. This stroking should be directed along the whole circumference of the occiput from one mastoid process to the other, to the insertions of the muscles of the neck and of the back of the neck. The stroking should be performed either with the thumbs or the closely approximated tips of the other fingers in a centripetal direction (i.e. towards the neck) downwards into the muscular bellies (twice from left to right and twice the reverse way). The individual sub-cutaneous and intramuscular indurations should then be sought out and stroked separately. This movement of simultaneous friction and percussion is best carried out by means of the tips of the three or four fingers closely approximated in such a manner that the wrist remains stiff and the actual movement becomes one of rotation through a small circle from the shoulder. One must constantly keep in view the end aimed at, viz., to disintegrate the nodules and the indurations. Each nodule should be manipulated not longer than half a minute, ending with *effleurage* directed according to the topographical position of the individual nodules.

Next, one should place both hands simultaneously on each side of the sagittal suture and carry out a movement of *effleurage*, using some force, pressing through the scalp and temporal muscles on to the skull and finishing close behind the auricles (6 to 8 times). The indurations situated in the area thus marked out are then sought out and the massage is applied as above described. If the temporal muscle itself is affected, it must be thoroughly treated by *effleurage* in the direction of its fibres, (toward the coronoid process of the lower jaw) and then by petrissage. After the manipulations there should follow a stroking of the occipitofrontalis in its entire breadth, from its tendinous insertion to the eyebrows, with the approximated finger-tips (6 or 8 times). Any possible nodules in this region are rubbed as above described.

Finally one should proceed to the *effleurage* of the skin and forehead and the side of the face, using the palms or surfaces of the fingers, those of the left hand on the right side of the forehead and those of the right hand on the left side, so that the tips of the fingers on each side meet, stroking downward to the bones of the face, pressing through the soft parts of the forehead, proceeding backward to the temples and cheeks and using firm pressure, more and more of the whole hand. When the angle of the jaw is reached, the head is so turned that the thumbs on each side press into the region in front of and internal to the sterno-mastoid where the great blood-vessels and the nerves are, and then carry out firm but not too deep *effleurage* over the great blood-vessels and the lymphatics in a centripetal direction. After the

massage the patient should rest for half an hour to one hour, lying down if it is possible.

In Prof. Edinger's prefatory remarks to Prof. Norstrom's book on chronic headaches he regrets that Norstrom, Hensehen, Helleday and the other Swedish authorities on the massage treatment are not sufficiently known. But since the translation of Prof. Norstrom's book into English (New York, 1902) we have nothing to complain of on that score. It is to be regretted that the same author's "*Traité Théorique Et Pratique Du Massage*," Paris, 1891, and his "*Céphalalgia Et Massage*," Paris, 1890, have not yet been placed within the reach of the practitioners whose college French has become somewhat rusty.

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### Medical Progress.

#### NINTH REPORT OF PROGRESS IN ORTHOPAEDIC SURGERY.\*

By HARRY C. LOW, M.D.; ROBERT SOUTTER, M.D.;  
 C. HERMANN BUCHOLZ, M.D.; MURRAY S. DANFORTH, M.D.; AND ROBERT B. OSGOOD, M.D.,  
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#### TUBERCULOSIS.

At the present time the discussion of the cause, exact site of origin and form of treatment in tubercular coxitis is as acute as ever.

Ridlon<sup>1</sup> in a recent summary of this subject discourages any routine method of treatment and emphasizes the importance of accurate diagnosis. It is his experience that the selection of appropriate methods of treatment must be determined by the individual characteristics of the case. He has never seen any good come from an open operation in tuberculous of the hip, and he cannot too strongly condemn the tendency of some surgeons to try to eradicate the disease process. Surgical interference is contra-indicated.

Fraser in his recent book<sup>2</sup> and other writings<sup>3</sup> has more definitely shown the importance of the bovine type of tubercle bacillus in joint disease. In a long series of cases, 62% were due to the bovine bacillus and a probable milk-borne infection. Of the 38% human cases, nearly three-fourths gave a family history of tuberculosis. Here is clearly shown the importance of the present activity in the study of social conditions in their relation to tuberculosis of the bone and an urgent argument for the isolation of pulmonary tuberculosis. He also maintains that the resistance of bone marrow in the healthy bone

\* This report is based on a review of 483 articles selected from about six hundred titles having to do with orthopaedic surgery appearing between August, 1914, and January, 1915. References are given to only such articles as have been selected for note and comment.

is great enough to prevent infection. Joints are readily infected through the blood stream, the anastomosis of the circulus vascularis in the fringes of the synovial membrane is the exact place where disease usually begins in previously healthy tissue.

All treatment must be based on diagnosis, and the development of the Wassermann reaction has shown us the probable reason why so many supposedly tubercular cases were benefited by the iodides. Mariano Salaghi<sup>1</sup> believes in the importance of iodine as an adjunct in the treatment of bone tuberculosis.

(ED. NOTE: The general tonic virtues of iodine are long established, but in the light of these cases showing the Wassermann reaction and atypical x-ray lesions the improvement from the iodine treatment is undoubtedly further evidence that the lesion is that of lues. Luetic bone disease is being recognized by us as much more prevalent than was formerly supposed.)

Ivashenzoff and Lange<sup>2</sup> have reported good results from the use of salvarsan in bone syphilis.

Not only must we learn to recognize the value of the Wassermann reaction in diagnosis, but we must not forget the tuberculin test. Keppler and Erkes<sup>3</sup> insist upon the value of subcutaneous injection of 1-10 to one milligram of tuberculin in every doubtful hip case. The marked local reaction, coming on in six to twelve hours, and lasting for a day or two in tubercular cases is always noticed. The negative findings are of only a little less value.

The great importance of the thorough study of etiological factors is further shown by Osgood<sup>4</sup> in calling our attention to an apparent relationship between faulty posture and of intestinal derangements and coxitis. He expresses the definite conviction that a joint never recovers complete range of motion and perfect function in which the clinical signs over a considerable period of time were typical of tuberculosis and in which the clinical diagnosis was confirmed by tuberculin reactions, roentgenoscopy or by exploratory operation and pathological examination. He believes that complete cure of tuberculous disease, especially in the hip, does not occur. His conviction is strengthened by the cases he reports, which presented the typical picture of tuberculosis, but have made complete recovery under simple postural and general treatment. All showed normal x-ray pictures and negative von Pirquet reactions. A careful search should be made in similar cases for a possible cause of toxemia.

(ED. NOTE: While it may be impossible to disprove Osgood's rather exacting requirements, it is still the equally firm conviction of men of wider experience that mild cases of tubercular coxitis may completely recover.)

Lapinsky<sup>5</sup> reports five cases and reviews eighty others in which there was pain and swelling in either knee or hip accompanying diseased processes in the viscera. The joints showed no pathological bone lesions, though there was swelling of the soft parts, fluid in the joints, and crepitus. As a proof of the correctness of the reasoning, the treatment directed toward the cure of the accompanying visceral disease was much more effective in relieving the joint conditions.

#### HELIOOTHERAPY.

In those climates where the sun's rays are less favorable for the application of heliotherapy, there

is much to recommend the use of Vignard's lamp. Pigmentation is as good and much more quickly obtained than by the sun's rays and there seems to be no more danger in its use. C. Martin-du Pan<sup>6</sup> has tried various artificial lights for the treatment of bone and joint diseases, but discarded the arc light, as it generates too much heat. The quartz mercury lamps send out rays most closely approximating direct sunlight, but the middle ultraviolet rays act on the skin, and although useful for lupus and other superficial lesions, they are not only useless, but injurious in treating deep lesions. They can be filtered out by interposing a sheet of "pastel" glass, white on the cut edge, which sifts out these middle ultraviolet rays. With a lamp constructed on this principle, with air passing out through a chimney at the top, the skin exposed to its light never gets warmer than 40° C. (104° F.) and there is no perspiration to debilitate the patient and make him thirsty. The lamp has 7,000 candle power and is run with a 500 volt current obtained from the street railway system. Four or five children are exposed to the light at a time. They lie on a large table which slopes down toward the centre. Each wears goggles to protect the eyes, but no clothes, the aim being to imitate as closely as possible with artificial light Rollier's method of exposure to the direct sunlight in the Swiss mountains. The result in the 32 cases thus treated has been extremely encouraging. They include tuberculous processes in the knee, spine, hip joints, etc., osteomyelitis, and two cases of chronic peritonitis. (One girl of six had been operated on two years before for an extremely painful tuberculous process in one knee. She later developed tuberculous keratitis and the other knee became swollen and painful. She was then given a course of the artificial heliotherapy and there was no further pain after ten exposures. By the end of three months the knee was apparently normal and the child had gained 900 gm. in weight.)

There is much to be gained in the treatment of tuberculous patients by taking an optimistic point of view; the pessimist has a hard time fighting tuberculosis, and Rollier<sup>7</sup> in his delightful book, "Le Cur de Soleil," does show what the sun and air can do. His cured cases of very extensive tuberculous bone disease are convincing. All he does is to apply sunlight directly to the skin of the whole body and have the patients maintain such rest as may be indicated by the extent and character of their disease. We should avail ourselves of his methods in the treatment of our patients as far as climate and local habits will allow.

Those who have seen cases improved under treatment with the sun's rays at the seashore are reluctant to acknowledge that the advantages of altitude are as great as are claimed. Andreae<sup>8</sup> has had very favorable results in using these therapeutic measures in the low-lying countries, and gives us encouragement to accept every help available in the treatment of bone tuberculosis and chronic osteomyelitis.

A. Martin<sup>9</sup> states that he knows of no instance of a tuberculous process in the clavicle of a child. The majority of those affected are, however, fairly young adults and have a history of tuberculous glandular process or otorrhea. In one case the process occurred in the clavicle of a young man with inherited syphilis. None of the patients had certain pulmonary tuberculosis, but were regarded as "suspects." Four cases are illustrated, showing that either end of the shaft may be involved. If

the latter, the findings are similar to those of *spina ventosa* in other bones.

#### ARTHRITIS.

The presence of a chronic focal infection is now presupposed in almost all persistent cases of arthritis and the first step in treatment is a search for its source.

Rosenow<sup>1</sup> says "the focus of infection is to be looked upon not only as the place of entrance of the bacteria, but also as the place where the organisms acquire the peculiar property necessary to infect." The poor results from autogenous vaccine may be due to the fact that the bacteria present in the focus at the particular time the culture is made, are not the same as those infecting the tissues.

Nicol<sup>2</sup> used in cases of chronic arthritis a polyvalent horse serum from 25-30 strains of streptococci isolated from enucleated tonsils or the joint fluids of arthritic patients. He concludes that the use of antistreptococcus serum in the treatment of chronic arthritis is neither advisable nor justifiable.

(ED. NOTE: The infected crypt of a tonsil may be easily detected, but the sealed cavity at the root of a tooth often serves for years as a source of infection without showing any local signs that may lead to its detection. The only way in which some of these cavities may be detected is by radiograms of the jaws, and to be satisfactory, these should be made on small films. The physician should make it a part of his duty to see that proper dental treatment is carried out.)

Gara<sup>3</sup> in a review of chronic joint affections resulting from metabolic disturbances, has encountered a special group of cases of chronic joint disease accompanied by various symptoms suggesting neurasthenia and disturbance in the genital sphere, besides the rheumatic joint affection. Closer study of this group of cases during the last three years has shown that the thyroid is always more or less enlarged. Discovery of this suggested that abnormal functioning on the part of the thyroid might affect the functioning of the ovaries. This assumption explained at once all the different symptoms observed, from the nervous palpitations and restlessness to the amenorrhea or dysmenorrhea, all of which had proven refractory to ordinary measures. The evidence which Gara presents makes a good plea on behalf of the thyroid origin and necessity for treatment on this basis in a certain portion of cases of chronic articular rheumatism. He has encountered 132 cases of the kind, all but eleven in women from 16 upward; forty-three were over 45. This thyroid group formed about 20% of his cases of chronic rheumatism of the joints.

(ED. NOTE: He practises at a spa, and consequently sees the patients only while they are taking the waters, so he has no opportunity to apply continuous treatment on the premises. He urges general practitioners to be on the lookout for such cases and to give them systematic thyroid treatment on the above basis.)

Schwarz<sup>4</sup> in the military sanatorium of Teplitz-Schonau, has treated during the last eight years 6232 cases of articular affections. Most cases had gonorrhoeic arthritis, a number septic metastatic affections and some traumatic arthritis. He reports particularly the good effects of the baths upon the absorption of exudates. In cases of contractures, medico-mechanical treatment is used in connection with the bath.

Gillette<sup>5</sup> calls attention to the injurious effects of forcible passive motion in diseased and traumatic joints. This is a very timely paper, in which the author makes a plea for the protection of and later active motion only to the point of pain in inflamed joints, instead of the forced passive motion either with or without anesthetic, which is too commonly practiced.

In a long paper Axhausen<sup>6</sup> discusses the causes of the early cases of deforming arthritis of the knee. He believes injury to the cartilage is a most frequent stimulus to formation of loose bodies. Recurrent pain and swelling in any traumatic knee joint is sufficient reason for arthrotomy and removal of loose and pediculated bodies or folds of capsule.

(ED. NOTE: The results of arthrotomies in tuberculous and other stiff knees bear us out in advocating the exploratory arthrotomy and removal of obviously foreign bodies in a greater percentage of these persistent cases.)

There is a form of ankylosis of the spine that in its rapid course and our lack of knowledge of its cause or treatment is very discouraging. Turner<sup>7</sup> reviews the literature of the Bechterew and Strümpell-Marie types and concludes that Bechterew may be wrong in some statements and that the ankylosis of the spine which he describes is simply a form of arthritis deformans, and that the cause will be found in some focal or specific infection. There are, however, many cases carefully reported by Strümpell, Hoene, and a host of others that show absolutely no source of infection. It is evident that we must recognize a difference between the Strümpell-Marie and Bechterew types clinically and pathologically.

Fraenkel<sup>8</sup> describes pathological specimens that represent a difference between spondylitis ankylopoetica and spondylitis deformans. The former is ulcerative arthritis, a joint disease, where the ankylosis takes place in the small articulations of the spine, while the ligaments are not involved. In spondylitis deformans (Bechterew's) the stiffening occurs through ossification of the several intervertebral discs and ligaments and the growth of marginal exostoses. Clinically in this latter type it is unusual to find the spine ankylosed in its entire length, while this is the rule in the ankylopoetica type. The radiograph will differentiate these types and this is fortunate, because the prognosis is favorable in the ligamentous form and unfavorable in the true Strümpell-Marie type.

#### POLIOMYELITIS.

From Sever's<sup>9</sup> very adequate review of the recent literature on poliomyelitis one may draw his own conclusions. It is essentially an epidemic disease, Korczynski<sup>10</sup> showing that with the same infection various types occur according to the particular site of the attack. Any one of Wickmann's eight types may be represented.

(ED. NOTE: Variations in the wide spread systemic lesions of the viscera now recognized as occurring in this infection may account for all grades from the atypical or abortive cases to those appalling fatal ones.)

The unusual sporadic cases with atypical course and symptoms can be matched by some of the cases occurring in or at the end of epidemics, and with his conclusion we agree that both sporadic and epidemic cases are absolutely the same disease.)

Flexner and Amoss<sup>11</sup> report experiments which

show that usually the virus of epidemic poliomyelitis enters through the upper respiratory mucous membrane to the olfactory lobes and is distributed by the cerebro-spinal fluid.

Lenoble<sup>2</sup> has encountered six cases of familial paralysis in two families and in these alone in the ten years of practice in Bretagne. There is evidently some organic lesion of the anterior horns of a certain segment of the lumbar cord and nerve roots. He knows of nothing on record that compares with it, except what is called familial spasmodic dorsal tabes. The segment involved seems to undergo a senile degeneration, presumably from over-use. The paralysis of the extensor muscles comes on suddenly, in one leg at a time with formication and sense of coldness. First one and then the other leg may be attacked, and the paralysis or impotence of the leg may be more or less pronounced, but it passes off in a few weeks or months. The mildness of the phenomena and the pains in the legs are special features of the syndrome. The first attack came on at 25, 28 and 32 in one family, and at 18, 20 and 24 in the other; all of the patients were otherwise robust.

(Ed. Note: The selective lesions and mild course of the symptoms are suggestive of some of the abortive cases of poliomyelitis, but remembering the familial type, careful study will differentiate them. Taken alone one of these cases might well be confused with anterior poliomyelitis.)

In the treatment of deformities following infantile paralysis, Schouffler<sup>3</sup> makes an earnest plea for the use of splints in the prevention of contractures. The general plan is first to restore the limb to its normal position and hold it in place during the early stages, when recovery of the muscles may be expected. Many muscles apparently in complete paralysis are merely suffering from over-stretching, and when protected for a sufficiently long time, regain a great deal of their power. He also reminds us that too much massage as usually applied, and especially too much electricity, may injure rather than aid the weak muscles by over-stimulation. No case of deformity following infantile paralysis is so bad that there is no opportunity for improvement, and almost all cases can be put upon their feet and taught to walk, but it is also true that there is rarely a case so mild that it can be considered permanently cured and allowed to pass out of observation.

Celluloid has been much used as a light material for adaptable splints, and Batten<sup>4</sup> has treated in this way 24 out of 58 cases of acute poliomyelitis which were in his ward during the years 1912 and 1913. His method of making the splints does not differ essentially from the ordinary, but he insists on their early use. In cases seen within four weeks of the onset splints should be worn day and night and removed only for bathing and exercises. After one month it is often possible to get the patient into an erect position and attempt walking. Any apparatus fit to hold the lower limb in a position for walking is of the greatest assistance in properly developing the muscles. In the same way, he uses splints for the upper limbs to prevent deformity. Of the 24 cases thus treated 21 are known to have had no mal-position or contractures.

(Ed. Note: The cases studied were almost all of the acute type, in a certain percentage of which a good recovery takes place without careful treatment. His results in regard to subsequent deformity are more satisfactory than one would expect, but

probably many of them with several years of static strain will show the deformities characteristic of the paralyzed foot. The lightness of the celluloid splints is perhaps their most favorable feature. While apparatus may, as the writer states, help muscles to regain their power, heavy apparatus also adds burden which fatigues rather than strengthens, which supports, but does not stimulate.)

Spitzky<sup>5</sup> says that plastic operations for residual paralysis in these cases must be chosen to fit the existing conditions, and exemplifies the need of transposition of tendons for support rather than for muscle action. By this means and well considered arthrodesis, functional static results may be obtained.

Nerve grafting has rarely been successful in these cases and it is important to note the result obtained by Katzenstein<sup>6</sup>. Almost complete paralysis of the arm was greatly relieved by grafting the healthy supra-scapular nerve into the cervical plexus on the paralyzed side. The close proximity of the large vessels and the esophagus make this an operation of much seriousness. He has done a similar operation with the obturator nerve in leg cases.

(Ed. Note: The field of nerve surgery opened up by such operations as those of Foerster and Stöfel is as yet a *terra incognita*. There have been brilliant results, the possibilities are theoretically good, but as yet the chief encouragement is that they are still possibilities.)

#### SCIATICA.

Severe incapacitating pain along the course of the sciatic nerve is common and often difficult of treatment,—a baffling complaint it may well be called. Its chronic course has led to the use of various methods to find the means of cure in each case. Doubtless in intractable cases such as Nannini<sup>7</sup> reports, he is justified in exposing the sciatic nerve and making strong traction in both directions to break up the adhesions which he always finds present. After a few days of pain and paresthesia the leg was freely used in two weeks and the cures were complete and permanent, though it would seem that this operation for relief would not remove the cause and chance of subsequent attacks.

Autogenous vaccines and especially the gonococcus (Zapffe<sup>8</sup>) have been used often without sufficient clinical justification and some of the cases have been relieved.

Lethaus<sup>9</sup> thinks the use of alcohol to block a nerve with both sensory and motor fibres is a dangerous procedure. He injects 100 c. c. of a one per thousand solution of a mild anesthetic at the point where the sciatic nerve emerges from the great sciatic foramen, between the trochanter and the tuberosity of the ischium. Three or four injections into or about the nerve may be given once a week. In some cases both these and intradural injections fail and he recognizes that this form of treatment does not attack the causes and lays special emphasis on the necessity of eliminating every possible postural or inflammatory defect in the foot, leg or pelvis.

Heile<sup>10</sup> discusses the preferable technic for operative relief of pain from pressure or traction on the sciatic nerve, after failure of internal measures. He has found acute sciatica, especially sciatica developing after an accident, much easier to cure than moderate sciatica in patients with a familial tendency to rheumatism. When severe sciatica per-



sists unmodified by persevering internal treatment, he injects 100 to 200 c. c. salt solution directly into the nerve. This loosens up the fibres and may break up adhesions that have formed between the fibres and the sheath of the nerve. He makes the injection just as the nerve emerges from the sacro-sciatic foramen, at the centre of a line drawn from the superior posterior spine to the tuberosity of the ischium. In four exceptionally severe cases of years' standing in which no measures had given any but transient relief, he cured the sciatica at one stroke by the following operation, the interval since being fifteen months: He exposed the nerve where it pierced the pelvis, opened the outer sheath, and separated a network of adhesions inside. He ran his finger into the foramen to learn if there was any pressure on the nerve beyond and found it necessary in one case to excise the arteria comitans and the pyriform muscle, as they seemed to press on the nerve. He concluded by injecting salt solution into the nerve beyond the point he could reach. The nerve thus carefully isolated was buried between the fibres of the gluteal muscle, drawn apart for the purpose. The results in these desperately chronic and agonizing cases were so surprising that he does not wait for further confirmation to publish the method. When a preliminary injection relieved pain, even temporarily, this indicated that mechanical factors were involved, and the case seemed promising for permanent operative relief in this way. The same principle can be applied to other nerves. There were never any symptoms suggesting impairment of function of any fibres of the nerve afterward.

From these deep injections it is but a step to Stoffel's more exact and scientific operative procedure, the resection of 15-20 cm. of the affected branch of the sciatic nerve. Stoffel's first reported case was a chronic condition due to a sudden catch when lifting a heavy weight four years previously.

The mechanical and postural causes must be remembered, and Forbes' further believes sciatic pains are in the majority of cases due to the rheumatoid diseases, as classified by Goldthwait, especially the hypertrophic or chronic infectious type. Thus he thinks that in 90% of the cases general and local treatment of hypertrophic arthritis will give relief.

(Ed. Note: In recognition of the large number of cases of sciatic pains and scoliosis that occur in young and apparently healthy men due to sudden strain in lifting, which we find in our clinics, cases which show no bony hypertrophic changes, we have believed that the element of strain or partial subluxation with lesion of the muscles, fascia, and ligaments was by far the most important first cause, though hypertrophic changes may also be an added factor in some of the post-adult cases. A rheumatoid condition, one of unbalanced metabolism and assimilation may be a concomitant factor in chronic and persistent cases.)

These convictions are in keeping with the opinion of Bucholz, who in a second report of his extensive studies of sciatic scoliosis shows the undoubted relation of an anatomical lesion in sciatic pains. Out of 88 cases, 32 were due to a definite single trauma; 3 to infections in addition; 24 to occupational trauma; 7 showed no cause but hypertrophic arthritis. He describes very carefully the symptoms and remarks that the x-ray pictures, though important, unfortunately have not always helped much in making pathological diagnoses.

#### CONGENITAL DEFORMITIES.

##### Club Foot.

The correction and prevention of deformity in club foot is largely a matter of patient attention to the details of the particular treatment chosen. Schapp's realizes the need of early treatment, the importance of well controlled growth in determining the shape of the foot and the need of some healthy exercise rather than continuous fixation. Instead of retention in plaster he uses an ingenious device consisting of a leather band, shaped like a cone, placed around the dorsally flexed foot and leg, with the heel at the apex. A steel sole plate and lacing at the side and between the leg and at the top of the foot keep it from twisting off. Such an apparatus can be made to hold the foot in over-corrected position and be easily removed for massage.

Lamy in fourteen cases from two to ten months old, treated by Mencié's method, reports excellent results. By means of an osteotome and two small spoons, the astragalus is entered anterior to the fibula and the interior of the bone scooped out, allowing perfect over-correction of the deformity.

##### Congenital Dislocation of Hip.

The importance of attention to developing the details both of the treatment and after-treatment is well exemplified in the satisfactory results now shown in congenital dislocation of the hip.

Gaugele, who claims a successful result in every case of children under seven, believes his method of after-treatment is the most important factor. The first position in plaster is 90° abduction, 90° flexion, no rotation; changed in five weeks to 80-85° abduction, 90° flexion, 20° internal rotation. After fifteen weeks he holds the leg in his special brace (a complicated piece of apparatus, efficient, but evidently needing the special care that he lays stress upon). The brace, while allowing flexion and extension, limits the adduction and internal rotation. The position is gradually allowed to become more nearly normal during the eight to ten months that the brace is worn.

Mayer reports twenty-five cases completely cured. In the last five years he reports 95% of anatomical cures, as compared to 40% in 1907. Though he uses extension for two weeks before operation in the older cases, he thinks that in young children it does harm by overstretching the adductors. His long after-treatment is followed up in plasters immobilizing both thighs and including the foot on the affected side. Later he uses his modification of the Hoffmann apparatus.

Bradford, in reviewing the results obtained at the Boston Children's Hospital during the last 30 years, says that the percentage of cures has increased from the early failures to 90% of the single and 55% of the double. His own efficient apparatus for fixing the pelvis, producing extension, and exerting pressure on the greater trochanter is well known, and with this aid to mechanical efficiency he feels that it is necessary in occasional cases only to divide the contracted tissue, reduce the dislocation, and stitch the capsule closely about the neck.

Lexer in extreme cases of congenital dislocation now advocates removing the entire capsule, boring a deep acetabulum, forming a new head to correspond, and surrounding the head before placing it in a new acetabulum with a free transplanted fat flap. He reports the case of a nineteen year old patient operated on in this way, and seven weeks later patient could walk a few steps without use of a cane and with firm, free movement in the hip

joint. In certain cases he has resected the head and nailed it to the ilium as a projecting lip, securing a firm fixation for the head and allowing a pseudarthrosis to develop between it and the rest of the femur. He says that the limp disappears and fairly good motion and support are present. He formerly had some good results in the cases where he formed a bony ridge on the upper edge of the acetabulum by nailing on a piece of free transplanted bone.

(ED. NOTE: By this latter operation we have observed a very satisfactory result in one case operated upon by Brackett, where there was almost entire absence of the acetabulum and a much deformed neck of the femur, allowing considerable subluxation. The operation of forming a new acetabulum when it is possible and there is not much deformity of the neck of the femur has still a great disadvantage in that it may not result in a freely movable joint. The chances of stability in this method of nailing the head of the femur to the ilium are, on the other hand, of great advantage.)

#### DISLOCATIONS.

Though the symptoms of "snapping hip joint" may not often be severe, their persistence is sufficient to bring many of these cases for relief. They seem to be divided into types.

Coudray<sup>2</sup> describes the true snapping joint in which there is transient or intermittent subluxation of the head of the femur outside of the acetabulum, and a more common false type in which the click is caused by the slipping of a fold of fascia over the trochanter.

Bertein<sup>3</sup> thinks these trigger joints are due to a laxity of the capsule, often congenital. These are not reducible dislocations, but are voluntary subluxations of the joint controlled by muscle contraction. They reduce spontaneously, and the relaxation may be indefinitely repeated. The treatment is very unsatisfactory, though Müller<sup>4</sup> reports a cure in four months by the use of a steel spring band on the corset pressing just behind the trochanters. The false type of muscle or fascial bands may be cured in this manner or by excision.

More attention should be paid to the diagnosis of dislocations of the cervical spine. They do occur more often than is suspected and the diagnosis will generally be made from the x-ray. The case of rotary dislocation of the atlas complicated with aphonia reported by Morton<sup>5</sup> is especially interesting on account of the presence of an accessory cervical vertebra. The dislocation was caused by a twist of the neck in wrestling. The head was bent to the left shoulder and speech and swallowing were difficult. Under other a normal position was obtained by extension and rotation, and recovery in plaster was rapid. Abnormalities should be considered in all lesions of the cervical or lumbar spine.

Subluxations of the atlas upon the axis are reported in several cases by Ogilvie<sup>6</sup> and Griffith<sup>7</sup>. The former especially remarks that an unguarded, sudden jolt with direct blow may often be the cause and that the condition may not be suspected because the pressure symptoms often do not at once occur and are slight or entirely absent. Fractures occur in the majority of cases, and immediate reduction and fixation in plaster-of-Paris should be made. Subsequent distressing symptoms may necessitate operation. He classifies them in three types: the simple forward displacement, the flexion cases with horizontal and vertical malposition, and

those with rotation around the axis on the same plane. Griffith emphasizes the fact that only through the mouth can a picture of the odontoid occipito-atloid and atlo-axial articulation be obtained. He believes in Walton's method of reduction in cases of unilateral subluxation.

Habitual dislocation of the patella is an orthopaedic condition more easily diagnosed but less satisfactorily remedied. Lorenz<sup>8</sup> says that it is due to laxity of the joint capsule and of the vastus externus fascia on the inner side of the patella, uneven action of the quadriceps, various bone abnormalities, and deformities of the joint. It should be sharply distinguished from the congenital type. He performs a simple overlapping of the capsule and fascia on the inner side of the patella in layers, following the method of von Mikulicz.

(ED. NOTE: While this method often results in a relief of the condition, recurrence is not infrequent. We believe that in most cases a realignment of the pull of the patella tendon after the method of Goldthwait<sup>9</sup> is likely to offer more permanent correction. In cases in which there is a marked deformity of the outer femoral condyle the lifting of the condyle by means of a bone graft wedge offers a still greater security. This method of the re-establishment of a good inter-condylar sulcus in which the patella may rest was devised and employed successfully by Brackett and later described by Albee.<sup>10</sup>)

The shoulder is another joint subject to this recurring dislocation, and Schultz<sup>11</sup> gives an illustrated description of 23 cases and presents clinical and anatomic evidence to show that the accident causing the dislocation in the first place had not caused a lengthwise tear in the capsule but had torn the capsule loose from its attachment to the humerus or scapula. The retracted, jagged edges were unable to coaptate spontaneously and connective tissue grew into the gap. This answered the purpose in some cases but in others the least overstrain tore the connective tissue bridge and dislocation returned. This explanation of the causes of habitual dislocation is sustained by the frequent relapses after treatment by the most approved methods, operative or otherwise, had been applied to 26 shoulders (23 patients), as he describes in detail. One patient, a man of 60, had had the dislocation return eleven times; an injection of blood into the joint warded off recurrence for 18 months at one time. Schultze declares further that the changes in the bones, etc., are all secondary to this tearing off of the capsule from the bone. The proper treatment, he says, is to expose and examine the joint from the axilla, at the lower margin of the pectoralis. If there are no pathologic changes the capsule can be effectually closed by a suture. If the capsule stump has retracted and shrivelled, he draws it down and sutures it, thus making the capsule cavity smaller and then over the suture nails to the bone a well fitting flap of fascia. This technic has been applied to date only on the cadaver, but it proved extremely simple and the joint afterward effectually resisted all attempts to dislocate anew.

(ED. NOTE: The editors do not recommend the trial of this operation by others until Schultz has demonstrated its successful performance and subsequent permanent result in the living subject.)

## JOINT SURGERY.

The knee joint from all points of view presents one of the most interesting problems in orthopaedic surgery. There the arthroplasty and other surgical measures are more apt to fail on account of the severe stress that this joint undergoes and the flat nature of the articular surfaces. Any new point of attack like that which Corner<sup>1</sup> highly commends, and is to be credited to Jones of Liverpool and Smith of Winnipeg, should be mentioned. By a median incision, a longitudinal splitting of the patella and the quadriceps and the patellar ligaments, detachment of the ligamentous mucosa from the femur and separation of the alar ligaments, opportunity is given when the parts are retracted to inspect the whole joint thoroughly. The joint is closed by continuous catgut sutures.

Babitski<sup>2</sup> also reports the very satisfactory results of this means of access to the knee joint.

(Ed. Note: This method of opening the knee joint has been used by Brackett and others in the Orthopaedic Clinic of the Massachusetts General Hospital in many cases. There has been no failure to obtain first intention healing, and free motion in the joint has been regained in a surprisingly short time (3-4 weeks). The exposure offers an excellent opportunity of inspecting the condyles of the femur and the crucial ligaments. It offers the best chance of finding and removing foreign bodies and joint mice and lipomata. The semilunar cartilages in our opinion are more easily removed by the smaller internal and external L shaped incisions of Mr. Jones nearer the joint line.

In the hip and knee joints it may be said that mobility is not to be secured at the expense of stability and careful thought should be given to the relative functional value of a stiff or mobile joint.

Vulpus<sup>3</sup> reports excellent results in arthroplasty. Through large bilateral incisions he carves the articulating surfaces to the desired shape with delicate files and saws and interposes large pedunculated flaps of fascia, not only covering the raw surfaces of the femur, but in the knee, under-padding the patella. One case, recently seen years after operation, shows excellent results in a hip joint which had been previously ankylosed for twenty-five years. Two cases of severe and painful ankylosis of both hips showed such excellent results as to justify operative measures for all chronic joint processes entailing ankylosis.

In ankylosis of the jaw, Blair<sup>4</sup> believes that operation offers the only relief. He reviews the literature of 199 cases and shows that, except in a few, stretching is not a permanent or an adequate relief in ankylosis of the jaw. The operation properly performed is of little risk and of great benefit. He reports 13 cases, one-fourth of which are under ten years old, in 50% of these the cause was trauma due to an early fall or blow; in 20% it was scarlatina; other cases were due to suppurative disease of the ear, teeth, etc. Development is usually gradual. In operating he removes the condyle, coronoid process, and upper part of the ramus. They are cut out with forceps, chisel and rongeur. A space of three-fourths of an inch is left and a fatty flap of the tissue is inserted between the bony edges and fastened to the internal pterygoid muscles.

(To be continued.)

## Reports of Societies.

AMERICAN ASSOCIATION OF  
IMMUNOLOGISTS.

STATED MEETING, HELD MAY 10, 1915.

The President, DR. GERALD B. WEBB, Colorado Springs, Colo., in the Chair.

The Second Annual Meeting of this Association was held at the New Willard Hotel, Washington, D. C. After the meeting of the Council the scientific program was taken up.

THE VALUE OF VACCINES IN CERTAIN DISEASES OF THE  
EAR, NOSE AND THROAT.

DR. GEORGE M. COATES of Philadelphia presented this communication, limiting his discourse to the more common uses of this form of therapy and to the cases in which one might expect success, mentioning briefly some of those in which success could not be expected. He stated that his conclusions were drawn largely from his own work and that of his friends and colleagues in Philadelphia, though he had had due regard to the reports in literature. Successful vaccine therapy of the ear, nose and throat was not so easy as it might seem. It did not consist in buying a bottle of mixed vaccines and giving hypodermics according to the label on the bottle. Some good results might thus be obtained, but there would be many sad failures. Close study must be made of the individual case and reactions observed to determine all but the first dose. A good autogenous vaccine was usually superior to any other form, but it was not to be contended that a good commercial product was not better than a poor autogenous one, and a poor commercial one was no worse than a poor autogenous one.

A stock vaccine could be kept ready for use at a moment's notice and was of value in cases in which an autogenous preparation could not be used, as for prophylaxis. For immunization against acute rhinitis where a variety of organisms was usually found, a commercial mixture of some or all of these organisms was selected, and three or four injections given at three or four days interval, the dosage depending somewhat on the individual, the sex, age, etc. Whatever the initial dose might have been it is usually doubled for each succeeding dose, unless there was too marked a local or general reaction. This should insure the ordinary person against an attack for some months but in very susceptible individuals the entire course might have to be repeated. The failures as a rule were in those particularly susceptible to colds and having one after another in close succession. Most of these had the duration of the attacks lessened and the interval between them lengthened. The treatment of acute rhinitis was exactly the same as for prophylaxis except that it is pushed a little more vigorously and continued until the trouble has been conquered. Following the first dose, and this was true of all the conditions considered, there would probably be some exacerbation of the patient's condition with increased discharge which soon cleared up in favorable cases. This reaction was regarded as a favorable omen. Chronic rhinitis was to a certain extent also influenced by bacterins, but here the treat-

ment must be extended and the patient closely watched lest he become overtreated. Suppurations of the accessory nasal sinuses were not much relieved by vaccine therapy until adequate drainage had been established. In chronic sinusitis it was usually necessary to enlarge the normal ostium or make a large artificial opening before much could be expected from the use of vaccines. In acute diseases the results were good for the most part and a stock suspension might be used in order to get quick results, at least till an autogenous one could be prepared. It would not do to give vaccines for any acute headache that seemed to be of nasal origin, the diagnosis must be established. There were certain cases of chronic sinusitis in which vaccines prepared the way for operation. Recurrent furuncle about the alae nasi and close to the alar cartilages usually caused by one of the staphylococcus group, yielded in the most satisfactory manner to vaccine treatment. Treatment was usually started in these cases by a stock suspension of staphylococcus aureus and albus, and if this was not successful an autogenous vaccine was made later. This also applied to furunculosis of the external auditory canal. In atrophic rhinitis and hay fever the vaccine treatment had not been particularly gratifying.

The treatment of diseases of the ear by bacterins had yielded surprisingly good results although some were still skeptical regarding it. Considering the close relationship between nasal and aural infections, it was only reasonable to suppose that if ear patients could be immunized against nose and throat infection one was in a better position to treat the ear disease. In chronic catarrhal deafness astonishing results could not be looked for. In cases of acute suppurative otitis media of scarlatinal origin the writer was quite sure that by the use of autogenous vaccines the duration of the disease was materially shortened and many cases were kept from drifting into the chronic class. During the past winter the author and his assistant, Dr. M. S. Erner, had made autogenous vaccines for about forty-two chronic cases of suppurative otitis media at the Pennsylvania and Polyclinic Hospitals and so far they had obtained dry ears in about 40 per cent. Their cases had been all carefully selected as having had and resisted all the usual forms of treatment and they took no account of improvements. An ear must have ceased entirely to discharge in order to be considered cured. They had also been successful in a number of instances in which the bacillus pyocyaneus was the infecting agent. Improvement in general health and resistance to other forms of infections were observed in those that responded favorably to the vaccine treatment. There were many factors that militated against the potency of a vaccine, and in nose and throat work a frequent cause of error was in taking the culture. It took a trained aurist to take an uncontaminated culture from the middle ear or naso-frontal duct. The essayist said his method was as follows:

The external canal, membrana tympani and middle ear were cleaned thoroughly by means of suction apparatus and cotton swabs. Alcohol or alcohol and bichloride were then rubbed back as far as the drum to sterilize the external canal. By inflation through the Eustachian tube or by suction to the external meatus pus was forced from the recesses of the attic by a tube-mouth. The culture was then taken with a platinum loop or a very small amount of cotton wound on a steel applicator, thoroughly sterilized.

If no results were obtained after a few injections of a vaccine it was considered important and a fresh one prepared. The organisms found in by far the greater number of their chronic middle ear suppurations were the staphylococcus (aureus or albus), bacillus pyocyaneus and diphtheroid bacilli. Pneumococcus was found much less frequently, staphylococcus citreus was found twice and the organism of Vincent's angina twice. Since employing the technique outlined, pure cultures were frequently obtained, whereas by the older methods it was not unusual to find two or three organisms in the culture. Streptococci were often found in the acute cases but rarely in the chronic ones.

DR. FREDERIC E. SONDERN, New York: Dr. Coates' paper has interested me very much because it has been my good fortune to see specimens of the type he describes and I would like to agree with him in reference to what he stated in regard to the use of the autogenous vaccines. He has seen repeatedly good results following their use. I was present when Nagel read his paper before the Trilological Society in Washington and his results were astonishing in vaccine therapy. His description of the negative and positive phases interpreted clinically was beautiful and showed a very close observation. Many otologists have tried to follow the methods employed by Nagel with but little or poor results. In ear cases the successful outcome depends upon the condition of the ear. If there is dead bone present, you will not get the desired results. This also applies in using the vaccines in cases of sinus disease and inflammations of the mucous membrane of the nose. I have seen very gratifying results following the use of the vaccines, but it should be borne in mind that if the nose is so occluded that the patient cannot draw air through, especially if there is a sinus obstruction with pus present, the vaccines, I believe, are useless.

DR. MARTIN J. SYNNOTT, Montclair, N. J.: I understand from what has been said that there was no stock vaccine in the market for the treatment of hay fever. This may be true in the United States, but there is a stock vaccine from Sir Almroth E. Wright's laboratory in London (St. Mary's Hospital) which I have been using for two years; it is called "pollen vaccine" and is the result of the work of one of Wright's assistants. He also has produced a diagnostic test which is to determine the susceptibility of the patient, and is used in the eye to test the conjunctival reaction. After this, the dose of the vaccine was determined upon. This method was found to be very troublesome because the patient objects to having the vaccine instilled in the eye, dreading any possible injury to that organ. In some 20 or 30 cases which gave encouraging results, it has been my practice to give small doses of the vaccine, usually 0.1 c.c. This is given twice a week and then increased 0.1 c.c. unless there resulted either focal, local or constitutional complications. The preparation I use is imported and handled through the London branch of Park, Davis & Company. The New York branch does not have it on hand. If the package is marked "for experimental purposes" and is unsealed it will come through the custom house.

DR. A. PARKER HITCHENS, Glenolden, Penn.: I have had but a limited experience in the treatment of hay fever, but I have been given chances to use the injection of the pollen extract in both the treatment and prevention of hay fever and a few things I have learned may be of interest to the members



of this Society. One of the most interesting, I think, is the difference in the intervals necessary between the doses if I wish the patient to be entirely free from symptoms: I do not know just what the pollen extract does; the reason for the results obtained remain for the future to tell. A dose of the pollen extract is followed in nearly every case by a relief of the symptoms, that is, if you give the specific pollen or protein. The majority of the cases of hay fever so-called are undoubtedly due to certain pollens; in the fall we meet with the rag-weed, and in the spring orchard grass and red top are chiefly responsible. I have had one patient whose paroxysms were produced whenever he was in proximity to the magnolia trees. He had hay fever through both seasons. The first year I tried him on injections every seven days, but I soon noticed that he began to have symptoms about the end of the fifth day. I then shortened the time of giving the injections to five days and he no longer had more symptoms.

I believe that every rational treatment for the prevention of hay fever should be preceded by the diagnostic test. I believe that the experience of many men with the ophthalmic reaction as used in tuberculosis will cause them to hesitate using this method in the eye, and I do not really think this is at all necessary. The intradermal test gives as good indications as the ophthalmic reaction.

I have had but a limited experience with nasal and respiratory conditions, but they too have been interesting. I have had, for instance, a woman under my care who was afflicted with asthma; following the use of the autogenous vaccines, once a week, she was relieved of her asthma.

I should like to ask those present who have had some experience in the treatment of patients with hay fever if they can corroborate the statement made by Dunbar in the *Journal of Hygiene*, that he had injected many normal persons with pollen extract and none had become sensitized. Did sensitization depend upon these injections or anything of the kind?

I believe that one of the most important points brought out in Dr. Coates' paper was that the bacterial vaccine must be used with brains. A large number of physicians did not use their brains when using the vaccines; if they get no good results, they say the vaccines were of no value. It should be remembered that no good could come from the use of the vaccines unless the antibodies formed came in contact with the bacterial factor. Every practitioner of medicine should take this into account. I have given about 1500 injections and I have never had the slightest concern regarding any evil results.

Vaccines are valuable before operations for infections of the upper respiratory tract; a shorter or longer course of vaccines should be given before these operations are performed. We have never seen any harm result from anaphylaxis. In the tissues are antibodies and proteins; any proper antigen placed in these tissues exerts a favorable influence. If the ferment does not exert a specific function, helping to get a reduction of the infecting bacteria, not coming in contact with the infecting bacteria, or something else, there was some fault somewhere.

Dr. E. C. L. MILLER, Richmond, Va.: Certain observations make it appear as though hay fever caused an anaphylactic reaction. After the injection of protein the patient appears to be desensitized and more or less stimulated, and possibly other symptoms

may appear. If you continually inject patients with the same antigen, will not the patient become worse than he was before?

Dr. GERALD B. WEBB, Colorado, Colo.: I think it is a reproach to the medical profession that it has never dealt with the so-called "common colds." All of us have seen benefit result from the plan outlined by Dr. Coates. Perhaps the colds are not all caused by the organism you think they are. In London they find many cases of pseudo-diphtheria which are called "colds." It is well known that influenza comes in waves; in Colorado we have not met with the influenza bacillus for some five years. During this time, however, we have met with cases that looked like grippé but no influenza bacillus was present. We were able to ameliorate the catarrhal condition, but we did not seem to be able to "hit the nail on the head." We could get some benefit from the inoculation of the catarrhal organism, diminishing the discharge, but we did not cure the patient of his symptoms.

Patients with hay fever are susceptible to more than one pollen. Cottonwood causes the trouble in some. In treatment we employ sometimes the catarrhal organism combined with the pollen vaccine and in one-half of the cases treated we have had successful results.

Dr. GEORGE MORRISON COATES, Philadelphia, Penn.: In closing the discussion I wish to state that "colds" treated last about ten days; if untreated about eleven days.

A few days ago I did an operation for acute mastoiditis, obtaining a pure culture from the mastoid cells. In all my operations for mastoiditis, cultures are always made and vaccines regularly administered after operation, and my patients seem to get well in a shorter time. Dr. James F. McKernon of New York City, in cases of mastoiditis following scarlet fever and measles, uses the autogenous vaccines, thus reducing the time of healing to a considerable extent. In ear cases, the results of Nagel's work brought about much skepticism, but his work can be vouched for. In certain ear cases of the chronic type, even when necrosis is present, we can raise an artificial immunity and terminate the necrosis in a short time. It may take longer, but in the presence of a slight degree of necrosis, the use of bacterial vaccines influences the course of the disease very materially.

Election of Officers: President, Dr. J. W. Jobling, College of Physicians and Surgeons, Columbia University, New York City; Vice-President, Dr. George P. Sanborn, Boston, Mass.; Councilman, Dr. John A. Kolmer, Philadelphia, Penn.; Treasurer, Dr. Willard J. Stone, Toledo, Ohio; Secretary, Dr. Martin J. Synnott, Montclair, N. J.

(To be continued.)

*Cerebro-Spinal Fever.* By THOMAS J. HORDER, M.D.  
London: Oxford University Press. 1915.

Stimulated by the large number of cases of cerebrospinal fever in England in the past year Dr. Horder has collected and published in a small book of 170 pages the essential facts concerning this disease. The book presents nothing original; it aims only to present in readily available form the widely scattered studies of many individuals. The author has been very successful in condensing his material into very compact form.

## Harvard Medical School.

### THE PROFESSION OF MEDICINE.

A COLLECTION OF LETTERS FROM GRADUATES OF THE  
HARVARD MEDICAL SCHOOL.

EDITED BY ARTHUR B. EMMONS, 2D, M.D.

ATTENTION is called to the publication of Dr. Emmons, as outlined in the title above.

As stated in the preface, this is an analysis of letters received from ten classes of recent graduates, and is studied for the purpose of obtaining suggestions to aid students and young graduates in deciding their careers in medicine, and if possible, to learn how to improve the teaching of medicine as conducted in the Harvard Medical School.

The scheme is well conceived, well arranged, and the statements secured have been logically analyzed.

So far as the purpose and execution of this plan are concerned there is nothing omitted, and very little to criticize. Whether this study will lead to practical results or not, remains to be seen, and depends on whether the subject receives free discussion by those able to make the changes.

Very few of the answers deal with certain fundamental questions which are taken up by Dr. Emmons. Most of the criticisms of these recent graduates speak of lack of instruction in one or two comparatively unimportant subjects, or deal with the financial returns of the early years of practice.

Most of the criticisms reflect more on the practitioner than they do on the school, for even though there may be some deficiencies, in either the course or the method of teaching, it seems fair to assume that if a man had been desirous of perfecting himself along certain lines, the opportunities were not wholly lacking both before and after graduation, and the disappointments resulting from insufficient remuneration are due largely to the individual.

The mental irritation incident to competition, and unfair treatment by patients, also seems to indicate some inherent defect in the individual, for no work really worth doing is free from annoyances of various kinds, and one may well question, whether the complainant has studied himself and intelligently tried to adjust his mental equilibrium.

One very important and well accepted belief which seems to be substantiated by many of the letters, is that graduates of medical schools are not finished products. Possibly this must always be so, but theoretically, in the ordinary routine work of the doctor, it should not.

If a man settles in a community where he is expected to know simple therapeutic problems, and do minor surgery, and does not feel sure of himself in the presence of a case of dysentery, or cannot amputate a finger creditably, he has not been properly prepared, and must use his patients for study and practice. This is not fair, and sometimes the intelligent layman detects the impostor and assumes that medicine is less scientific than it really is. Medicine will never take its proper place in the world until a carefully regulated system of advancement of young practitioners is adopted.

Each one should demonstrate ability to those competent to judge before holding himself out to the public.

The medical schools hand the graduates over to the hospitals for practical work, in some cases, but not always, for some men enter practice immediately after graduation, and it may fairly be questioned whether all small hospitals give a service sufficiently complete to thoroughly equip a practitioner.

The medical school concerns itself more in teaching the theory of medicine, and even though it does have clinical material and clinical courses, does not always require a sufficient number of practical demonstrations to show that the graduate has more than a theoretical knowledge of medicine.

Again, medical schools may not require of their matriculates sufficient fundamental or natural qualities which may enable a man to develop into a good physician.

Dr. Emmons refers to this on page 109, where he speaks of the desirability of a probationary period.

It is certainly true that young men should not spend from four to six years in study, only to find that they are unfitted temperamentally to practice.

Admission to a school is almost always secured by the attainment of a certain minimum preliminary educational standard. If a person could be admitted to a school for a limited time, during which every effort should be made to demonstrate what the practice of medicine really is, and what it ought to be, for the purpose of determining whether a certain candidate might reasonably expect to be adapted to the vocation, with the understanding that he should withdraw if not approved, some misfits might be avoided, and there would be less grumbling later on about the inadequate returns and unfair competition, for no man should enter medicine unless he can look beyond the physical hardship, and also the financial return, which is too often the only personal measure of success.

Under any system the men of unusual ability will climb, but we need a plan whereby the honest and efficient person, without great ability, can do work that he is fitted to do, to the end that he may serve the public up to, but not beyond his own efficiency, and fill his social niche.

A study of this work of Dr. Emmons leads one to speak of some medical problems not fully considered in the pamphlet, and one is led, after reading the replies to the letters, to suggest an analysis of the men who wrote them, for one cannot give due weight to criticism unless one knows the writer and his environment.

The plan to omit the name of the writer may lead to free criticism, but it also prevents the compiler from considering the personal equation, which would have been a valuable factor.

In justice to the public, one wonders oftentimes what methods may be employed in the future to determine the real value of a man's work, and the question arises as to the advisability of requiring some end result, or checking system, on the work of the private practitioner. If it is necessary in the case of a hospital, why not even more so for the great mass of people who do not make use of hospitals?

The public as a class, is wholly incapable of correctly estimating the quality of medical service.

and one may be pardoned for the suspicion that supervision exercised very little beyond the student days, is inadequate.

In law, one man's work has usually to be scrutinized by his opponent, but in the chamber of the sick there is often no check on incompetence.

Why should not medical schools, and the profession, teach that the best practice of medicine in the home, requires team work in all important cases? This is advocated by certain individuals. Why not have it established as an approved custom, so that the young man would be expected to work with groups of older men, and be advanced according to his efficiency.

This is Utopian, and contrary to the ambitions of the average beginner, but seems to the writer to be sound.

The work done by Dr. Emmons warrants careful study, not only by the medical school, but by practitioners at large, who share in the responsibility of the medical profession to the public.

WALTER P. BOWERS.

## HARVARD MEDICAL SOCIETY.

BOSTON SOCIETY OF MEDICAL SCIENCES PROGRAM.

*Amphitheatre of the Peter Bent Brigham Hospital,  
Tuesday Evening, December 21, 1915.*

Dr. S. B. WOLBACH in the chair.

### EXHIBITION OF CASE.

DR. CHANNING FROTHINGHAM, JR., "A Case of Bothrioccephalus Latus Infection."

Paper of Dr. E. E. TYZZER: "Factors in Tumor Immunity."

It appears important to consider resistance to spontaneous tumors and to transplanted tumors separately. While recovery from malignant tumors is of rare occurrence, local regressions of tumor nodules are not uncommon, although the tumor may be actively growing elsewhere. Certain organs apparently furnish a soil favorable for the growth of certain types of tumor. Tumors of the lymphoma group are usually largely restricted to the lymphoid tissues. Other types of tumors are prone to invade the bone. In certain cases where there is satisfactory evidence of general dissemination of tumor cells, metastases are found in certain organs, while they are absent in others. The white cells of myelogenous leukemia implanted beneath the skin fail to form tumor masses but are quickly absorbed. Likewise the tissue from the tumor masses in Hodgkin's disease implanted beneath the skin disappear at once, so that there is no trace within a period of a few days.

It is difficult, however, to judge to what extent the result depends upon the biological character of the tumor and to what extent on the peculiarities of the body tissues. It is quite impossible to state that one individual is

more resistant to cancer than another, from the fact that we do not know but what the tumors in the two cases are biologically different. It is possible, however, by employing the experimental method either to use the tumor as a constant with which to measure the resistance offered by various animals, or to use a uniform type of animal with which to measure the differences in the biological character of various tumors.

### TRANSPLANTED TUMORS.

Immunity may be produced in certain instances with transplanted tumors by previous inoculation of other normal tissues or of badly growing tumors. It is necessary, however, to employ living cells, and immunity cannot be produced with dead cells or tissue extracts. If implants of a tumor are made in the animal in which the tumor arose (autoplastic grafting), growth is almost invariably obtained. If implants are made into other individuals of the same species, the implants grow more frequently in the more closely related individuals and less frequently in the less closely related (homeoplastic graft). The implantation of tumor tissue to a foreign species is invariably unsuccessful (heteroplastic grafting).

The microscopical examination of implants in non-susceptible animals shows that for a period of six or seven days the tumor grows as well as in the susceptible animal. At the end of this period a reaction appears, characterized by infiltration with leucocytes, which increases in amount until the tumor tissue is completely isolated from the supporting tissues upon which it depends for its nutrition. If such animals, in which an implant has been destroyed, are again inoculated with tumor, the reaction now appears more promptly and the tumor disappears at an earlier period.

These phenomena are explained by the production in the immunized mouse of an immune body, which has apparently no direct cytotoxic or cytolytic action on the tumor cells but which serves to make the latter positively chemotactic, as the result of which inflammatory reaction appears which isolates the tumor and leads to its eventual destruction.

### THE INHERITANCE OF SUSCEPTIBILITY TO IMPLANTED TUMORS.

Non-susceptibility is found to have as its basis a *foreignness or unlikeness* of the tissues, making them incompatible with the growth of a given tumor. The unlikeness may be based upon differences with respect to a few factors or differences with respect to many factors. There is now evidence that these factors are inherited according to Mendel's law, since it is recognized that non-susceptibility is dependent, not upon differences with respect to a single inherited factor, but upon differences with respect to a large number. Tumor immunity is thus based on foreignness or incompatibility with respect to the relationships of tissues. This holds true whether we take the tumor or the individual as the constant factor with which to test the other. We find that the reactions most favorable for a tumor growth are found in the genetically homogeneous material. Differences in the behavior of tumors arising in homogeneous races are attributable to the acquisition of new characters and the fact that these breed true is demonstrated by the

propagation of tumors by transplantation over a period of many years. Tumors, therefore, appear to be of the nature of somatic mutations.

The following viewpoint concerning the nature of tumors and their relationship to other tissues is offered.

The relationship of normal tissues is one of symbiosis, that is, they are mutually beneficial. The anomalies and benign growths have the relationship of commensals, in that the latter, although not especially harmful to the individual, are, nevertheless, not beneficial. Malignant tumors, on the other hand, behave in many respects as parasites developing at the expense of other tissues, and having no useful function. They are not of such a nature, however, that they stimulate immunity sufficient for their destruction.

#### DISCUSSION.

DR. COUNCILMAN: There are some things about certain tumors found in man which point toward immunity. The period which occurs before metastasis sets in probably represents a phase of immunity. At such a time the spread of the new growth is not inhibited by lack of opportunity, for the cells often have access to the circulation. The cases which seem to offer no limitation to a diffuse growth of the tumor, furthermore, suggest an absence of immunity as compared with the average case.

DR. TYZZER: An example of unlikeness is furnished by the external characters, for example, albinism. The factors in tumor immunity are analogous to the well known factors in color inheritance. In the case of the dancing mouse, there are twelve or fourteen known factors.

Paper of DR. W. G. SMILLIE: "Report of an Epidemic of Septic Sore Throat, with Some Studies of the Etiological Agent."

Since the epidemiologic study of Winslow there have been reported each year two or more epidemics of tonsillitis due to the use of infected milk or milk products. In most instances a streptococcus has been suspected as the causal factor.

In January, 1915, Smith and Brown showed that the streptococcus found in the throats of patients, in the infected milk, and even in the udder of infected cows, was a human strain with a group of definite characteristics.

1. A type of hemolysis, called by them the beta type.
2. Characteristic carbohydrate fermentation reactions.
3. Characteristic virulence to rabbits.

In April, 1915, there was an outbreak of septic sore throat in a suburb of Boston. There were 227 cases with 2 deaths. Fifty per cent. of the cases were mild in type, forty per cent. moderate in type, and ten per cent. severe.

The type of streptococcus described by Smith and Brown was isolated from the suspected milk, from the throats of the patients, and from the throats of five of the dairymen. The identity of the types of streptococci was proved by both cultural characteristics and agglutination reactions.

Four of the dairymen were probably infected at the same time as were the patients and were a part

of the epidemic. One of the dairymen had had sore throat and fever three weeks previously, and at the time of the outbreak had a rather characteristic desquamation on his hands and feet. He had been helping with the milking during his convalescence. It seemed probable that this individual, directly or indirectly, was a source of infection of the milk supply.

#### DISCUSSION.

DR. ROSENAU: One of the most interesting facts connected with this epidemic is that the infection is a human disease and may not be very pathogenic for the cow. The cow, accordingly, may be a carrier of this organism.

The name septic sore throat is a barbarous one. It is highly desirable that some new and more appropriate designation be adopted.

The motto of this whole study is—pasteurize the milk.

DR. PLACE: Infections with this organism may give pictures which cannot be differentiated from scarlet fever. The question which then arises is whether this streptococcus is the organism responsible for scarlet fever. A number of the cases reported tonight had typical scarlet fever clinically. My own belief is that the bacteria responsible for these infections are entirely distinct from the virus of scarlet fever. The streptococcus, however, may persist in cases of scarlet fever for long periods. The scarlet fever virus and the streptococcus apparently may both enter the milk supply.

The paper of Drs. W. B. Cannon and McKee Cattell on "Some Conditions Controlling Thyroid Activity," was postponed until January 11, 1916.

ERNEST G. GREY, M.D., Secretary.

#### Book Reviews.

*Diseases of Infants and Children.* By HENRY DWIGHT CHAPIN, A.M., M.D., and G. R. PINKES, M.D., Sc.D. Third revised edition. One volume of 595 pages. Octavo, illustrated by 179 cuts and 12 colored plates. New York: William Wood and Company. 1915.

This, the third edition of this well-known work since 1909, has been thoroughly revised and brought up to date. The newest tests, such as the Schick and the luetin, have been described. A modified Binet-Simon test for mental deficiency has also been added. The book has been entirely reprinted from new plates on thinner and lighter paper and has been reduced in price. Like the other editions it is, however, unsatisfactory in that it is incomplete and too much in the nature of a compendium. We regret, as we have before, that the authors have not seen their way clear to give us the comprehensive and authoritative work for which they are so eminently fitted.



## THE BOSTON Medical and Surgical Journal

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All letters containing business communications, or referring to the publication, subscription, or advertising department of the Journal, should be addressed to

ERNEST GREGORY, Manager.

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## ANNOUNCEMENT.

WITH its current issue, the BOSTON MEDICAL AND SURGICAL JOURNAL, the oldest medical weekly in America, begins its second year under new administration. While remaining an independent Journal of Medicine and Surgery, its association with the Massachusetts Medical Society, as the official organ of that organization, has made possible, we believe, a wider range and intimacy of service to the profession. The value of this continuing association should only increase with time; and the JOURNAL takes a grateful pleasure in extending to its cordial collaborators of the Society sincere appreciation of their energy, patience, uniform courtesy, good will and devotion.

In the light of a year's experience under the changed conditions, there seems every reason to hope that, in its widened sphere, the JOURNAL may steadily increase the quality and extent of its representative service. The Massachusetts Medical Society will continue to subscribe to the

JOURNAL for each of its members in good standing, so that the JOURNAL will be sent to them in addition to its regular subscribers.

The attention of readers is particularly called to the continued high ethical policy of the JOURNAL as regards advertisements, a policy which is under the constant supervision of a committee of experts and is a sufficient evidence of the reliability of any matter that appears in its advertising pages.

During the past year, the current literature department of the JOURNAL has been augmented; a new department has been established in which can be presented more fully topics of interest and importance connected with the medical schools and affiliated hospitals. The JOURNAL has adopted the standard library size of reprint, and will hereafter furnish 100 reprints free to each author, upon his written request.

Particular attention is directed to the new department of Therapeutic and Preventive Medicine appearing in the current issue of the JOURNAL for the first time. This department is intended to present articles devoted to the more practical aspects of the treatment and prophylaxis of disease, especially medical, for the benefit of general practitioners. Surgical papers and articles of research will appear as heretofore in the department of original articles and case reports in the clinical department. The first article in the new department is by Dr. Justin Herold of New York on the treatment of the important and frequent symptom, headache. Others, by well known authors, on the treatment of diabetes, syphilis, nephritis, and various common medical affections, will appear at least once a month.

During the coming year, the JOURNAL will continue under the same administrative and editorial direction. Its editorial policies will be under the determination and supervision of the same committee of consulting editors who have served so effectively during the past year. To the members of this committee, to his immediate editorial colleagues and assistants, to the abstractors and to all who have contributed or assisted in the preparation and conduct of the JOURNAL from week to week the editor-in-chief most cordially offers his grateful acknowledgment and appreciation. And to all its readers and well-wishers the JOURNAL expresses its sincere good wishes and its desire and hope worthily to represent and serve the medical profession during the new year.

### ENDOWMENT OF THE AMERICAN COLLEGE OF SURGEONS.

THE American College of Surgeons begins the new year with an announcement that it has secured from its Fellows an endowment fund of \$500,000. This fund is to be held in perpetuity, the income only to be used to advance the purposes of the college. By this means lasting progress toward the purposes of the College is assured.

The college, which is not a teaching institution but rather a society or a college in the original sense, now lists about 3400 Fellows in Canada and in the United States. Primarily the college is concerned with the training of surgeons; but the significant fact in connection with the endowment just secured is that it has come from the surgeons themselves, inspired by a motive for better service to the patient. Ideals in the profession of medicine are living things. Probably no more convincing proof of this fact exists than the sacrifice which the surgeons of this continent have made willingly in order to raise this fund.

To begin with, these ideals are to find concrete expression in the following modes of activity:

1. Since the whole problem of the training of specialists for the practice of surgery is the primary purpose of the college, the regents propose at an early date to present a clear conception of the college to the undergraduate medical students of this continent. The regents, further, will ask each senior student of this group who has in mind to specialize in general surgery or any branch of surgery to register with the college. As these students, then, serve later as internes and as surgical assistants, they will be requested to report these facts to the college. The college, in turn, will systematically seek information as to the ability and character of such men; and the information thus obtained becomes the basis of admission to Fellowship in the college. In addition to this procedure, the regents will insist upon the proper keeping of case histories, and they will endeavor to stimulate in these men right ideals of medical practice. In this program they ask the active co-operation of the faculties of the medical schools and of all practitioners of medicine.

2. Inasmuch as proper training in surgery is inseparably involved with the conduct and efficiency of hospitals, the college will seek accurate

data on all matters which relate to hospitals. From time to time it will publish studies upon hospital problems, the purpose being always to be helpful to the hospitals. These publications, further, will inform recent medical graduates as to where they may seek adequate general or special training in surgery. To be concrete the college will deal with such problems as (a) the proper equipment for medical diagnosis, *e.g.* well equipped laboratories for chemical, pathological, and x-ray work; (b) the proper forms for case histories and the facilities for keeping these records; (c) the management and the curricula of the nurses' training schools; (d) the specialization essential in any well organized hospital.

3. The college will ask the faculties of medical schools to consider the advisability of conferring a supplementary degree of proficiency in general surgery and in the various specialties of surgery.

4. The college will issue readable monographs, educational in nature, to the press, to the general public, to hospital trustees, and to the profession of medicine upon subjects of medical procedure and the whole meaning of fitness to practice surgery.

The entire impetus of the college springs from within its own membership. Necessarily that impetus implies reform. But there is a vast difference between reform preached at men and reform innate in the hearts of men which finds expression at their own initiative. Whatever impetus the college possesses, it originates among the surgeons themselves, it is not an extraneous force. Rather, out of the widely divergent views on many subjects among the Fellows, the aims of the college rise as those time-tried aspirations which are inherently the basis of all that is valuable in the vocation of surgery. The purposes of the college are concerned directly with matters of character and of training, with the betterment of hospitals and of the teaching facilities of medical schools, with laws which relate to medical practice and privilege, and with an unselfish protection of the public from incompetent service; in a word, they embody those ideals which have stood the test of centuries. Upon these the Fellows are united. These are the ideals which each Fellow, single-handed, has endeavored to foster, and the expression of them to-day through the colleges comes as a mass-consciousness of the whole body.

JOHN G. BOWMAN.

## THE AMERICAN JOURNAL OF ORTHOPEDIC SURGERY.

BEGINNING with its January number, the *American Journal of Orthopedic Surgery* has transferred its place of publication to Boston, and instead of being a quarterly, becomes a monthly journal under the able editorial direction of Dr. Mark Rogers of this city. While remaining the official organ of the American Orthopedic Association the *Orthopedic Journal* expresses its intention to enlarge its scope and increase its usefulness to the general physician and surgeon as well as to the orthopedist. It is the only journal in the English language devoted entirely to bone and joint surgery and should continue, as it has done in the past, to be one of the leading publications of this specialty in the world.

The transference of the editorial and publication headquarters of the *American Journal of Orthopedic Surgery* to Boston is particularly appropriate, in view of the foremost position which the profession of this city has taken in the development of orthopedies in America. The work of Bradford and the group of distinguished younger surgeons trained in his school, or succeeding to his leadership, has made Boston recognized internationally as one of the great orthopedic centres of the world. Moreover the hospital facilities for orthopedic surgery in this city make possible further leading development of the science by Boston surgeons.

The enlarged scope and frequency of publication of the *American Journal of Orthopedic Surgery*, marking the third definite advance in the policy and interests of this publication, should enable a great increase in its possibilities of scientific publication and of practical service to the profession. Under the editorship of Dr. Rogers we feel sure that the promises evidenced by the contents of this first issue will be abundantly fulfilled; and it is with the greatest pleasure that the BOSTON MEDICAL AND SURGICAL JOURNAL extends to its contemporary the most cordial greetings of the New Year and confident good wishes for its deserved success.

## EPIDEMIC RESPIRATORY INFECTIONS.

DURING the past three weeks there have been, throughout the eastern and northern sec-

tions of the United States, especially in large cities, extensive and sometimes serious epidemic respiratory infections. Often these have been termed influenza, but improperly so, since it does not appear that they have in any important instance been due to the influenza bacillus. Rather they have been of the type commonly, though unsatisfactorily, described as grip, or septic sore throat. The clinical manifestations have been protean, from those of the simple "cold," through the categories of acute tonsillitis and bronchitis, to the immediate or terminal phenomena of pneumonia.

The extent of these epidemic respiratory infections has in some communities been very great. In Chicago, on a given day, 85,000 children were absent from the public schools for this cause. In Philadelphia the total number of cases is estimated to have been 15,000 and 650 deaths of acute respiratory infection are said to have occurred during the week ended December 25. In Camden, N. J., there were 1000 cases and 50 deaths during the same week. Similar epidemics are reported in Milwaukee and Detroit, and almost universally in smaller communities.

In New York the manifestation of the epidemic seems to have been predominantly pneumonic, 2000 cases of pneumonia having been reported in that city alone during Christmas week.

In Boston, where we can speak of the epidemic from personal observation, it has seemed that nearly everyone has or has had the prevailing infection. Fortunately, in our locality, the disease has apparently been of a rather mild, non-virulent type. It has appeared likewise in hospitals, where it has run through entire wards, and, in surgical cases particularly, has given rise to puzzling complications, simulated other infections, and in some instances led to serious metastatic processes.

The conditions favoring the wide and rapid spread of these epidemic respiratory infections are obviously those of over-crowded, super-heated and ill-ventilated public conveyances, meeting-places, offices, and homes, combined with inclement weather and improper, usually excessive clothing. The personal prophylaxis depends upon avoidance of these conditions and maintenance of physical resistance by abundant fresh air and sleep, good food, adequate catharsis and individual hygiene.

### COMPULSORY INDUSTRIAL HEALTH INSURANCE.

It is announced that there will soon be filed before the Massachusetts General Court a bill, introduced under the auspices of the American Association for Labor Legislation, providing for a system of compulsory health insurance for all industrial workers receiving salaries of \$100 a month or less. It is intended that this insurance shall cover any sickness, accident or death not covered by the Workmen's Compensation Act. Further benefits are provided to insured members in the way of medical, surgical and nursing attendance, medicines and surgical supplies, and cash, maternity and funeral allotments. For the administration of this system the plan provides for the appointment of a state social insurance commission of five members selected by the Government.

Until further details are available, further comment on this bill will not be made; but when the complete text of the bill can be obtained, it will be discussed editorially in a future issue of the JOURNAL.

### EUGENICAL NEWS.

THE Eugenics Record office at Cold Spring Harbor, Long Island, N. Y., begins this month the publication of a small bimonthly bulletin entitled "*Eugenical News*," which is to be devoted to reporting the work of the office. This organization has now trained over 100 field workers, of whom, at least a third are still actively engaged in social and eugenical research. The investigation of family histories is also being made under the direction of the office by a number of other agencies. The *Eugenical News* will be a medium of intercommunication between these agencies and those interested in eugenics throughout the country. It is intended also to include in its field other eugenical news, comprising notices and reports of meetings, eugenic laws passed by different states, and the growth of knowledge about selection, natural fecundity, control of death rate and of national migration. This publication seems to have a definite field in a new and still elementary branch of medico-social science and its progress will be watched with interest by physicians, social workers and publicists.

### DR. DAVID WILLIAMS CHEEVER.

THE death of Dr. David Williams Cheever, at the passing of the old year, took from the surgical profession of Boston one who had been for many years its dean,—a distinguished, familiar, and universally respected figure. Descendant of a family of intellectual attainments for eight generations in New England, the late Dr. Cheever exemplified the finest accomplishment and character of the type of which he was so eminent a representative. Austere and devoted in his manner and habits of life and work, he saw always with a single purpose the ideal of professional duty and service. His writings, which have appeared often in these pages, were testimony, like his life, of the sincerity and integrity of his professional career. In his long years of labor and achievement, he has left as a legacy to the profession a high example of unselfish and unswerving fidelity and of scientific achievement, and to his worthy and beloved namesake and successor a precious heredity of inspiration to fine ideals.

### MEDICAL NOTES.

PREVALENCE OF MENINGITIS, POLIOMYELITIS, AND TYPHOID FEVER IN NEW YORK.—The weekly report of the United States Public Health Service for December 17, states that during the month of October, 1915, there were in New York State thirteen cases of cerebrospinal meningitis, seventy-one of poliomyelitis and seven hundred and seventy-two of typhoid fever.

TYPHUS FEVER IN MEXICO.—In recent issues of the JOURNAL we have noted the occurrence and extension of an epidemic of typhus fever in and about Mexico City. It is believed that there are at present 25,000 cases of the disease in that city, and report from Washington and New York on December 24 states that the American Red Cross and the Rockefeller Foundation will probably unite in an expedition to eradicate the disease as was recently done in Serbia. At its latest meeting the executive committee of the National Red Cross adopted the following resolutions on the subject.

"That subject to the necessary permission and co-operation of the Mexican government, the American Red Cross is prepared to send to Mexico a competent corps of physicians, sanitarians and nurses to combat the present epidemic of typhus fever in Mexico and co-operate with the Mexican government and Mexican physicians to that end."



**VITAL STATISTICS OF NEW JERSEY.**—The report of the State Board of Health of New Jersey for the year ended October 31, 1914, shows a constantly lowering death-rate with a correspondingly lowering birth rate. The marriage rate, however, has slightly increased. As a cause of death consumption stands first, with diarrheal diseases of children and pneumonia second and third respectively. A combination of figures showing the causes of deaths for the past thirty-five years gives consumption as greatest cause and diarrheal diseases of children as second. The death-rate from consumption for the present year, however, is the lowest on record and undoubtedly the lowest in the history of the state. Cancer, on the other hand, is steadily increasing. Thirty-five years ago the number of deaths from this disease was 378; a rate of 3.7 per 10,000 population. In the year 1913 the number of deaths had risen to 2120, with a rate of 7.65, a proportion which is almost doubled. The number of deaths from suicide was 444, a slight increase over the previous year.

**INFANT MORTALITY IN THE UNITED STATES.**—The recently published third annual report of the Children's Bureau of the United States Department of Labor emphasizes the importance of the relatively high infant death-rate among the babies of working mothers. During the past year the infant death-rate in a large steel-making and coal-mining town was 134 per thousand as compared with 84 per thousand in a residential suburb. It does not follow, however, that the greater mortality in the one case is necessarily due to maternal employment rather than to the general environmental conditions of living. The necessity is also emphasized for developing standards of rural child welfare and for children in industry.

"The bureau reports a year of activity dealing with eight different phases of child welfare. It has been studying the social causes of infant mortality, doing constructive work for child hygiene, coöperating in a general test of birth registration, preparing a report on social care of mental defectives and of illegitimate children, reviewing the principles of community provision for recreation, compiling laws relating to children, and analyzing the administration of child labor laws and street trade regulations in selected typical states. It has also begun certain experimental activities which will prepare the way for the detailed studies of rural child welfare and the physical effects of child labor which it will undertake at some future time when staff and equipment permit."

**NEW YORK DEATH RATES.**—The death rate from influenza and pneumonia has taken a jump. According to figures compiled by the Department of Health the noteworthy feature of the mortality report for the week ending December 25 is the abnormally high death rate from influenza and pneumonia. The number of deaths from in-

fluenza is five times as great as during the corresponding week of last year, and twice as numerous as the deaths from this cause during the previous week. There were nearly 200 more deaths from pneumonia last week than during the corresponding week of 1914. If we estimate that the mortality of pneumonia is about 20 per 100, there were about 2000 cases of pneumonia in the city last week.

The mortality of the acute infectious diseases, considered as a group, was lower than during the corresponding week of last year. The total number of deaths reported for the week was 1724 as compared with 1363 during the corresponding week of last year, the respective rates being 15.49 and 12.74. The death rate for the 52 weeks of the year was 1355 as compared with 1360 for the corresponding period of last year.

#### EUROPEAN WAR NOTES.

**FRENCH AND GERMAN ARMY DEATH RATES.**—Report from London on December 20 states that during the early months of the war 85% of the German wounded were returned to military service, while 12% were disqualified from further service and 3% died. During the later months of the war these figures are said steadily to have improved and at present 89½% of the German wounded are returned to service, 8.8% are unfit for further service and the death rate is only 1.7%.

Report from Paris on December 20 states that during the early months of the war the mortality among French wounded was 5.3% and that at present it is only 1.8%. Among the civilian population of Paris, the death rate in hospitals in times of peace is 10.6%.

**CHOLERA IN AUSTRIA-HUNGARY.**—The weekly report of the United States Public Health Service for December 17, 1915, states that during the week ended September 25 there were in Austria 937 cases with 508 deaths of Asiatic cholera. In Hungary during the three weeks ended October 17 there were only 90 cases and 53 deaths.

**SCARLET FEVER IN GERMANY.**—Report from London on December 27 states that scarlet fever is epidemic in Bromberg and a number of neighboring villages of Posen.

**THE HOSPITALS IN BELGIUM.**—In a recent issue of the *Manchester Guardian* is the following item descriptive of the Belgian hospitals as at present serving the wounded of that nation at various points.

"The one at Rouen, started by an English committee, is specially for mechanotherapy. Here are all kinds of electrical appliances, massage, hot-water treatment, and mechanical apparatus for restoring the muscles to a normal condition. All this apparatus, and also wonderfully perfect artificial limbs, are made by the men themselves in workshops attached to the hospital,

for all the depots are perforce run on the self-help principle. There are several Belgian convalescent hospitals scattered through Normandy and Brittany, generally in remote inland villages, where a disused factory or manor house or convent can be adapted. Pitiful accounts have reached England of no beds, or children's beds lengthened by a box at the end, of no heating apparatus, of no lamps, few blankets, no music, no games, of incomplete hospital stores and instruments—in short, of convalescent soldiers with all the odds against their convalescence.

"But help to enable them to help themselves is now reaching these Belgian convalescent depots, through an English committee. Yet another branch of war service has been developed by the Belgians with great ingenuity and resourcefulness—namely, depots for mutilated or amputated soldiers. A beautiful estate on the Seine was lent last July, and already there are huts on it for 600 inmates, and soon there will be accommodation for 2000. Every variety of trade and occupation is taught, so that each disabled man finds out for what he is best fitted. He is paid a small wage by the hour. This is saved for him, so that if he returns to Belgium after the war he will not only possess a means of earning a living, but also a little capital. A similar depot which was started with the help of a loan from an English woman married to a Belgian has paid the loan back, and is now self-supporting and accepts large contracts for goods for the British army."

**WAR RELIEF FUNDS.**—On January 1, 1916, the totals of the principal New England relief funds for the European War reached the following amounts:

Jewish Fund .....	\$965,886.00
Red Cross Fund .....	142,563.12
Belgian Fund .....	80,214.01
Serbian Fund .....	58,994.31
Allied Fund .....	46,105.80
French Fund .....	33,362.54
Armenian Fund .....	27,010.42
Surgical Dressings Fund .....	16,464.00
La Fayette Fund .....	14,488.99
Italian Fund .....	13,922.02
Polish Fund .....	12,232.38

#### BOSTON AND NEW ENGLAND.

**SOURCE OF INFLUENZA.**—In conjunction with the editorial in another column of this issue of the JOURNAL on "Epidemic Respiratory Infections," it is of interest to note the following communication on the subject from a physician in the daily press of January 2:

"In Dunglison's Medical Dictionary, which I first opened some years before my prime, grippe, or la grippe, is defined as influenza. However, this Russian disease, like many another unwelcome immigrant to our shores, came across the ocean in a reverse direction and against the atmosphere currents. It cannot be premature for

me to explain to the readers of a second generation since its arrival in America, now fully 25 years, some of its peculiarities and some remote effects. Early in the year of its invasion, it was my privilege to observe numerous cases of this protean and serious infectious disease. At this time, its source had not been discovered nor its 'bacillus' named. For myself, I then sufficed to recognize its local power in the naso-pharynx and in the ears, and when, later, it had been more or less endemic, to perceive its protean character. Experience has made me bold, and circumstances taught me that if one really desires to prevent himself from taking the disease, he must avoid getting nervously exhausted. To cure it, he must rest. After one is seized with the infection, it becomes essential to avoid depressing drugs and secure local treatment at the spot where the disease invaded the system.

"There are very many cases which are called pneumonia, or more properly, pneumonic, and are in reality the cases in which a large area of lung tissue is involved, but wherein only very small bronchial tubes are inflamed. The actual depressing effects of the virus of influenza are felt in the nervous system. The area of lung involved is of little moment if this virus is prevented from entering through the naso-pharynx. It is here that the point of invasion is discovered. This also proves the futility of isolating patients already infected. The germs were in the air, were breathed for many hours and finally grew and produced the toxins or virus which later lay the victims low. These facts are proved by studying the various epidemics or endemics. It is more important to know what to do with the invader than it is to know where he came from. So if he can be reached as he enters one's economy he can at least be inhibited, if he cannot be prevented from entering.

"EDMUND D. SPEAR, M.D."

**RETURN OF DR. OSBORN.**—It is announced that Dr. Stanley H. Osborn, who has been serving for several months as a war surgeon in Serbia and at Vienna, is to return to Boston to accept the recently vacant position of health officer in the Berkshire District of the Commonwealth of Massachusetts, succeeding Dr. Lyman A. Jones whose transfer to the Essex County District we noted in a recent issue of the JOURNAL.

**HOSPITAL BEQUESTS.**—The will of the late Patrick H. Cooney of Natick, Mass., which was filed for probate on December 22 in the Middlesex Court, contains bequests of \$5000 to the Leonard Morse Hospital of Natick, and of \$1000 to the Carney Hospital, South Boston. The sum of \$500 is left to the Natick Visiting Nurse Association.

**MASSACHUSETTS VITAL STATISTICS.**—Advance sheets have recently been issued of the seventy-

third annual report of the secretary of the Commonwealth of Massachusetts on the vital statistics of this state for the year 1914. The report has been prepared under the editorship of Mr. Frank S. Drown, an expert from the United States Children's Bureau. Considerable attention is devoted in the report to the discussion of birth rates and to methods for the more complete and perfect registration of births.

During the year 1914 there were in this state 9339 births, 52,978 deaths, 32,588 marriages, and 2200 divorces.

The birth rate in 1914 was 25.8 per 1000 population, being the same as in the preceding year, but greater than in any previous year since 1908, when it was 26.9. The average for the sixty-four years, 1851 to 1914, was 26.4.

The marriage rate in 1914 was 18 per 1000 population, being .3 above the rate for 1913 and .1 below the average for the ten years 1904 to 1913. The average rate for the sixty-four years, 1851 to 1914, was 18.9.

The divorce rate in 1914 was 156 per 100,000 married population, an increase of 10, or 7 per cent. over the average for the five-year period 1908 to 1912.

The death rate was 14.7 per 1000 population, the lowest ever recorded in this Commonwealth, notwithstanding the fact that there was a larger absolute number of deaths than in any previous year except 1913, 1911, 1910 and 1907. The average death rate for the ten preceding years, 1904 to 1913, was 16 per 1000, and the average rate for the 64 years, 1850 to 1914, was 18.5.

The infant mortality rate was 105.9 per 1000 live births, the lowest ever recorded in this Commonwealth, the rate for the preceding year, 1913, being 110.1, while the average for the ten years, 1904 to 1913, was 128.4. Notwithstanding the growth in population and the steadiness of the birth rate there was also a reduction in the actual number of infant deaths in 1914, as compared with 1913, of 192, or 1.9 per cent.

In the city of Boston the infant mortality rate was 103 per 1000 live births, as contrasted with a rate of 110 in 1913. There was also a reduction in the actual number of deaths under one year, as compared with 1913, of 98, or 4.6 per cent. Thus a large proportion of the salvage of infant life in Massachusetts during 1914 took place in Boston, where the infant welfare agencies have been most untiring in their campaigns for baby saving. These figures are probably an indication of the extent to which the adverse influence of urban surroundings on infant life may be avoided.

Mortality from all the epidemic diseases was below the average. The number of deaths from typhoid fever was the lowest on record, and the number of deaths from measles the lowest since 1898. The mortality from diphtheria and croup conjointly was the lowest on record except for 1913, 1912, 1911 and 1909. There were no deaths from smallpox.

Cancer caused a larger number of deaths than in any preceding year, as did Bright's disease (except for 1911), while the number of deaths from tuberculosis of the lungs was the lowest on record. The importance of cancer as a cause of death at the present time, both because of the number of victims and the practically uninterrupted increase since the beginning of registration, is sufficient to justify the somewhat extended space given to it in this report.

There was a decline in the number of views made by medical examiners in 1914 of 100, or 1.6 per cent., and a decrease of 410 autopsies, or 46.1 in 1914 took place in several counties, although the greatest reduction took place in Suffolk County, where the reduction amounted to 366, or 60.3 per cent.

**CANDIDATES FOR DENTAL REGISTRATION.**—It is announced that of 127 candidates who took the November examination for registration before the State Board of Dental Examiners, only 39 were satisfactorily passed.

### Miscellany.

#### PHILIPPINE CIVIL SERVICE EXAMINATIONS.

##### BACTERIOLOGIST AND PATHOLOGIST (MALE).

The United States Civil Service Commission announces an open competitive examination for bacteriologist and pathologist for men only. From the register of eligibles resulting from this examination certification will be made to fill vacancies in this position, Bureau of Science, Manila, P. I., at salaries ranging from \$2,000 to \$2,500 a year, and vacancies as they may occur in positions requiring similar qualifications, unless it is found to be in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion. The duties of this position will be to carry on research work in the laboratories of the Bureau of Science, combined with the regular routine bacteriological and pathological work.

The degree of M.D. or Ph.D. from a college or university of recognized standing, including at least one year's training in bacteriological laboratory work, is a requisite for consideration for this position.

The medical certificate on Form B. I. A. 2 should be executed in accordance with the instructions printed thereon. If it is impracticable for an applicant to appear before a Government physician or a pension-examining surgeon on account of his distance from such a physician, the medical certificate may be executed by any reputable physician other than the family physician of the applicant; but a person submitting such a certificate may be required to undergo another physical examination in case of appointment. Each applicant must file with his application his unmounted photograph, taken within two years. Tintypes or proofs will not be accepted. This examination is open to all men who are citizens of the United States and who meet the requirements.

Persons who meet the requirements and desire this examination should at once apply for Forms B. I. A. 2 and 2118, stating the title of the examination for which the forms are desired, to the United States Civil Service Commission, Washington, D. C.; the secretary of the United States Civil Service Board, post office, Boston, Mass., Philadelphia, Pa., Atlanta, Ga., Cincinnati, Ohio, Chicago, Ill., St. Paul, Minn.,

Seattle, Wash., San Francisco, Cal.; customhouse, New York, N. Y., New Orleans, La., Honolulu, Hawaii; old customhouse, St. Louis, Mo.; Balboa Heights, Canal Zone; or to the chairman of the Porto Rican Civil Service Commission, San Juan, P. R. Applications should be properly executed and must be filed with the Commission at Washington prior to the hour of closing business on January 18, 1916. The exact title of the examination as given at the head of this announcement should be stated in the application form.

#### ASSISTANT SURGEON (MALE).

The United States Civil Service Commission announces an open competitive examination for assistant surgeon, for men only. From the register of eligibles resulting from this examination certification will be made to fill a vacancy in this position in the Bureau of Science, Manila, P. I., at a salary of \$1,800 a year, and vacancies as they may occur in positions requiring similar qualifications, unless it is found to be in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion.

Applicants must have graduated in medicine from a medical school of recognized standing, and in addition have had special training in bacteriology, either during their medical course, or in postgraduate work. Statements as to education and experience are accepted subject to verification. Applicants must have reached their twenty-first but not their fortieth birthday on the date of the examination.

The medical certificate in Form B. I. A. 2 should be executed in accordance with the instructions printed thereon. If it is impracticable for an applicant to appear before a Government physician or a pension-examining surgeon on account of his distance from such a physician, the medical certificate may be executed by any reputable physician other than the family physician of the applicant; but a person submitting such a certificate may be required to undergo another physical examination in case of appointment. Each applicant must file with his application his unmounted photograph taken within two years. Tintypes or proofs will not be accepted. This examination is open to all men who are citizens of the United States and who meet the requirements.

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#### NOTICES.

CONFERENCE ON MEDICAL EDUCATION.—The Twelfth Annual Conference on Medical Education, Public Health and Legislation will be held at the Congress Hotel, Chicago, Monday and Tuesday, February 7 and 8, 1916, under the auspices of the Council on Medical Education and the Council on Health and Public Instruction of the American Medical Association.

Monday, February 7, will be devoted to medical education, and Tuesday, February 8, to medical legislation and public health.

All State Licensing Boards, State Boards of Health, State Medical Societies, Associations of Universities,

and other organizations interested, are invited to send representatives to this conference.

On Wednesday, February 9, the Federation of State Medical Boards of the United States and the Association of American Medical Colleges will meet.

Council on Medical Education,  
N. P. COLWELL, *Secretary*.  
Council on Health and Public Instruction,  
FREDERICK R. GREEN, *Secretary*.

#### SOCIETY NOTICES.

BOSTON MEDICAL LIBRARY.—The annual meeting of the Boston Medical Library will be held in Sprague hall at the Library, on Tuesday, January 11, 1916, at 8.15 P.M.

Dr. John MASON Little, Jr., will give a talk, entitled "Medical Work in Newfoundland and Labrador." Refreshments after the meeting.

WALTER L. BURRAGE, M.D., *Secretary*.

MASSACHUSETTS GENERAL HOSPITAL CLINICAL SOCIETY.—The next meeting will be held in the Out-Patient Amphitheatre at 7.15 P.M., on January 10, 1916.

#### Subjects:

1. Hodgkin's Disease, Dr. M. Smith-Petersen.
2. Diabetes, Dr. O. F. Rogers, Jr.
3. Presentation of Pathological Specimens of Unusual Interest.

The visiting staff, the administrative staff, physicians, surgeons and students are cordially invited.

ELLIOTT C. CUTLER, M.D., *Secretary*.

#### RECENT DEATHS.

DR. RUDOLPH AUGUST WITTHAUS died at New York City on December 21, he was born in New York in 1847. After graduating from Columbia University in 1867 he traveled abroad, attended Sorbonne University, and from 1873 to 1874 the Collège de France. Returning to the United States he received the degree of M.D. from the New York University in 1875, and a few years later became professor of chemistry and toxicology at that institution. He was widely known as an expert on poisons and was author of a number of books on their detection.

DR. THOMAS JOSEPH LEAHY, a Fellow of the Massachusetts Medical Society, died of pneumonia at his home in Cambridge, December 25, 1915, aged 46 years. He was a graduate of St. Mary's Parochial School and of the Harvard Medical School, in the class of 1892. He was also A.B., Holy Cross, 1888. He is survived by his widow and four children.

DR. A. ALEXANDER SMITH, who died on December 13, was born in 1846. He was for many years professor of medicine in the Bellevue Hospital Medical College and in the combined University and Bellevue Hospital Medical College.

DR. DAVID WILLIAMS CHEEVER died at his home in Boston, December 27, 1915, aged 84 years. He joined the Massachusetts Medical Society in 1858, was recording secretary from 1896 to 1897, and president from 1888 to 1890. He was president of the Boston Medical Library from 1896 to 1906. His name was placed in the retired list of the Massachusetts Medical Society in 1907.

#### IODEOL—ADVERTISED BY DAVID B. LEVY.

Through an inadvertence, the advertisement of David B. Levy, which appeared on page xiii in the issue of December 30, was printed with the wrong name-plate. The preparation described and recommended in the indications named should have been IODEOL instead of IODAGOL. To prevent any possibility of confusion as to the uses of these two articles, we call attention to the corrected advertisement which appears on page xi of this issue.